MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

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INTRODUCTION.

The REVIEW for March, 1897, is based on 2,764 reports from stations occupied by regular and voluntary observers, classified as follows: 142 from Weather Bureau stations; numerous special river stations; 33 from post surgeons, received through the Surgeon General, U. S. Army; 2,547 from voluntary observers; 96 received through the Southern Pacific Railway Company; 14 from Life-Saving stations, received through the Superintendent United States Life-Saving Service; 32 from Canadian stations; 1 from Hawaii; 20 from Mexican stations. International simultaneous observations are received from a few stations and used together with trustworthy newspaper extracts and special reports.

The WEATHER REVIEW is prepared under the general editorial supervision of Prof. Cleveland Abbe. Unless otherwise specifically noted, the text is written by the Editor, but the meteorological tables contained in the last section are furnished by Mr. A. J. Henry, Chief of the Division of Records and Meteorological Data. Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada, Mr. Curtis J. Lyons, Meteorologist to the Government Survey, Honolulu, and Dr. Mariano Bárcena, Director of the Central Meteorological Observatory of Mexico.

CLIMATOLOGY OF THE MONTH.

GENERAL CHARACTERISTICS.

The month was remarkable for the general character of the paths of the storm centers; for the high winds of the 12th and 14th in the lower Lake Region and on the middle Atlantic Coast and 25th and 27th on the coast of Oregon and Washington; for the heavy snows in the Rocky Mountain Region; for the remarkable rains in the watershed of the lower Mississippi and its tributaries, culminating in a region of 18 inches of rain in the Valley of the Tennessee and causing most destructive floods in the Mississippi River; the abnormally low temperatures in the Dakotas and the Canadian Northwest Provinces and westward to the Pacific Coast; the high temperatures in the Gulf States.

ATMOSPHERIC PRESSURE.

[In inches and hundredths.]

The distribution of mean atmospheric pressure reduced to sea level, as shown by mercurial barometers, not reduced to standard gravity, and as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), is shown by isobars on Chart IV. That portion of the reduction to standard gravity that depends on latitude is shown by the numbers printed on the right-hand border.

The *mean pressure* during the current month was highest off the south Atlantic Coast and high in Manitoba, Athabasca, and Saskatchewan. It was lowest in Newfoundland and low off the coast of Oregon. The reduced pressures were highest: In the United States, Charleston, S. C., 30.16; Savannah, Wilmington, Raleigh, and Norfolk, 30.14. In Canada, White River, 30.13; Battleford and Swift Current, 30.12. The lowest were: In the United States, Tatoosh Island, 29.87. In Canada, St. Johns, N. F., 29.77.

As compared with the normal for March, the mean pressure was in excess in the Atlantic States and Lake Region, but was deficient on the Pacific Coast. The greatest excesses were: In the United States, Eastport and Block Island, 0.12; Boston, 0.10. In Canada, Yarmouth, 0.10; Edmonton, 0.08; Charlottetown, Chatham, Quebec, Montreal, and Rockliffe, 0.06. The greatest deficits were: In the United States, Tatoosh Island and Fort Canby, 0.15; Concordia, 0.14; Corpus Christi and San Antonio, 0.13; Palestine, 0.12. In Canada, St. Johns, N. F., 0.06; Winnipeg, 0.03; Calgary, 0.02.

As compared with the preceding month of February, the pressures reduced to sea level show a rise on the south Atlantic Coast, as also in the Canadian Northwest Territories and upper Lake Region, but a decided fall in the west Gulf States, southern Plateau Region, and north Pacific Coast. The greatest rises were: In the United States, Norfolk, Hatteras, Raleigh, Wilmington, Charleston, Williston, Havre, and Miles City, 0.05; Kittyhawk, Charlotte, Savannah, and Duluth, 0.04. In Canada, Swift Current, 0.07; Qu'Appelle and St. Johns, N. F., 0.04. The greatest falls were: In the United States, Rapid City, 0.13; Pueblo and Santa Fe, 0.12; Denver Dodge City, and San Antonio, 0.11. In Canada, Quebec and Montreal, 0.06; Kingston, 0.05; Chatham, Father Point, Kingston, and Toronto, 0.04.

AREAS OF HIGH AND LOW PRESSURE.

By Prof. H. A. HAZEN.

During March six high pressure areas and twelve lows were sufficiently well defined to be traced, and their paths are shown on Charts I and II of this REVIEW. As a general thing, the center of the high area can not be determined with the same accuracy as that of the low, and in consequence the paths of the highs are not as definite as those of the lows. The accompanying table gives the principal facts as to the date and location of each high and low, with the duration

and length of path and apparent velocity of translation. The following particulars are added:

HIGHS.

The highs have come from the region north of Montana, with a single exception, No. VI, which was first noted to the north of Lake Superior. Their translation was generally a little south of east, Nos. III, IV, V, and VI disappearing in the middle Atlantic or merging in the subpermanent high in that region. Nos. I and II moved northeast near the Atlantic Coast, and were last noted off Nova Scotia. There were no notable cold waves accompanying any of these high areas. The greatest fall in temperature in twenty-four hours within the United States was 36°, at Huron p. m. of 5th, while high No. II was situated to the north of Montana. A fall of 34° occurred at Oklahoma a. m. of 12th, while high area No. III was to the north of Montana.

LOWS.

The most remarkable fact about the low areas of this month is the origin of Nos. I, IV, V, VII, VIII, XI, and XII either on the middle Rocky Mountain crest or else a little east of there. These have been especially studied, and will be described at another time. Storms No. III and X were first noted on the north Pacific Coast, Nos. II and VI to the north of Montana, and No. IX in south Texas. Of these storms Nos. VI and X disappeared to the north of Montana or near Manitoba, No. VII to the north of Lake Superior, Nos. XI and XII in the middle Mississippi Valley, and all the rest traversed the Lake Region and disappeared in the Gulf of St. Lawrence or off Newfoundland, where there was a subpermanent low pressure area during the month. The highest wind of the month (76 miles per hour from the west) was reported from Buffalo p. m. of the 12th, while storm No. IV was central in the St. Lawrence Valley. The same station reported 68 miles west on the evening of the 14, as storm No. VI approached the mouth of the St. Lawrence.

The accompanying table presents the principal facts regarding the place of origin and disappearance of these highs and lows.

Movements of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long W.	Length.	Duration.	Daily.	Hourly.
High areas.		°	°		°	°	*Miles.*	*Days.*	*Miles.*	*Miles.*
I	1, a. m.	52	114	5, p. m.	45	58	3,470	4.5	771	32.1
II	4, a. m.	54	114	9, a. m.	46	58	2,920	5.0	584	24.3
III	12, a. m.	50	110	15, p. m.	38	77	2,410	3.5	689	28.7
IV	14, a. m.	51	106	17, p. m.	36	74	2,280	3.5	651	27.1
V	20, p. m.	50	114	28, p. m.	35	78	3,230	8.0	404	16.8
VI	28, a. m.	49	85	30, a. m.	34	73	1,200	2.0	600	25.0
Total							15,510	26.5	3,699	
Mean of 6 tracks							2,585	4.4	616	25.7
Mean of 26.5 days									585	24.4
Low areas.										
I	1, p. m.	35	100	4, a. m.	47	61	2,100	2.5	840	35.0
II	3, a. m.	53	114	6, a. m.	49	67	2,800	3.0	932	38.8
III	4, a. m.	52	122	11, a. m.	47	59	4,180	7.0	597	24.9
IV	10, p. m.	39	104	13, p. m.	48	58	2,530	3.0	844	35.2
V	13, p. m.	38	90	15, a. m.	49	55	1,920	1.5	1,280	53.3
VI	14, p. m.	53	117	19, a. m.	52	97	1,340	4.5	275	11.5
VII	18, a. m.	45	107	20, p. m.	48	84	1,520	2.5	607	25.3
VIII	20, p. m.	36	102	23, a. m.	47	63	2,180	2.5	871	36.3
IX	21, p. m.	28	100	26, p. m.	46	58	2,990	5.0	598	24.9
X	26, p. m.	34	111	29, a. m.	35	98	890	2.5	355	14.8
XI	27, a. m.	48	127	29, p. m.	54	109	1,160	2.5	466	19.4
XII	29, a. m.	41	107	*	36	91	920	3.0	308	12.8
Total							24,430	39.5	7,973	
Mean of 12 tracks							2,036	3.3	664	27.7
Mean of 37 days									618	25.7

*April 1, a. m.

LOCAL STORMS.

By A. J. HENRY, Chief of Division of Records and Meteorological Data.

The record of local storms for January, February, and March is as follows:

January 2.—Tornadoes wrecked the small villages of Mooringsport, La., and Benton, Ark., on the afternoon of January 2, 1897. Five people were killed at Mooringsport and 21 were injured; the property loss was about $6,000; path of storm, 300 yards wide; length, unknown; movement, northeast; time, 3.45 p. m., ninetieth meridian. The tornado at Benton, Ark., was much more destructive to property, although but one life was lost. The total property loss was estimated at $12,000 in the town and a much larger sum for the county. Details as to the latter, however, are wanting. The path of the storm was 100 yards wide; length, unknown; movement, northeast; time, about 7 p. m., ninetieth meridian.

The meteorological conditions on the above date were not greatly different from those which generally obtain during the occurrence of tornadoes. A shallow depression covered the west Gulf States, the lowest reduced pressure at 8 p. m., seventy-fifth meridian time, being about 29.80 inches. Rain was falling in Louisiana, Arkansas, Mississippi, and Missouri, and snow, with temperature below freezing, in southern Kansas. The temperature was more than 20° above the normal of the season at Shreveport and Little Rock, the nearest points of observation to the scene of destruction. The barograph curve at Little Rock, about 20 miles northeast of Benton, shows an abrupt rise of about 0.08 inch at the time the tornado struck the last-named place. The increased pressure was maintained for about two hours and fifteen minutes, when an equally abrupt fall occurred, after which the pressure continued to rise and fall in short oscillations of about 0.05 inch amplitude for a period of about fourteen hours.

February 21.—A diminutive tornado was reported to have occurred near Benwood, Clay County, Ind., on the evening of February 21, 1897. The path of the storm was estimated to be about 100 yards wide and 3 miles long. The damage was not great. The meteorological conditions on February 21 were not such as are generally noted in connection with tornadoes. A correspondent of the Bureau writing from Terre Haute, 15 miles southwest of Benwood, says:

> About 8 o'clock Sunday morning (the 21st) the wind suddenly shifted from the south or southwest to the northwest, blowing quite strong, accompanied with round snow, enough to make the ground quite white. At the same time there was a great deal of thunder. In the course of an hour the wind veered to the north and northeast, the snow changing into a cold rainstorm, which continued hard and steady, with very few cessations, until dark. The air was raw and chilly here at Terre Haute all day.

At the time this tornado occurred Benwood was in the northeast quadrant of a somewhat oval-shaped depression that covered Missouri and the west Gulf States. The temperature at Benwood was probably not greatly above 40°, if it reached that figure. Snow was falling in Iowa. The region of warm, moist, southerly winds, so far as can now be ascertained from the daily weather maps, did not reach the southern border of Indiana.

March 5.—Violent squall winds prevailed over north-central Texas, Arkansas, Tennessee, and Kentucky during the 5th. Fifteen buildings were wrecked at Frost, Tex., and 4 persons were injured. Property loss, $4,000. Hope, Ark., also suffered a loss to buildings estimated at $15,000. Damage to roofs and frail structures was reported from a number of places in Tennessee and Kentucky.

March 9.—A severe hailstorm occurred at Evansville, Ind., hail the size of pigeon's eggs fell for five minutes.

March 11.—Hailstones varying in diameter from ¼ to 1¼ inch fell at Nashville, Tenn., for a period of six minutes. The accompanying rainfall was very heavy and, it is said, the fury

of the storm was something unparalleled in the annals of Nashville.

March 12.—High winds at Buffalo and vicinity caused some damage to movable property and frail structures.

March 13.—Another severe hailstorm swept over a narrow path about 200 miles long and probably 5 to 10 miles wide, extending from Fayette County, in the southwestern part of Tennessee, to Smith County, in the east-central part. The towns of Somerville, Bolivar, Decaturville, Centreville, Franklin, Lavergne, Hendersons Crossroads, and Watertown were damaged to a greater or less extent. A smaller storm traversed the counties of Lincoln, Moore, and Coffee, in the southern part of the State, and losses to buildings in the vicinity of Rockhill by severe winds, aggregating $5,000, were reported.

March 19.—On this date minor tornadoes occurred at widely separated places, viz, near Salina, Kans., about 6 p. m., 90th meridian time; near Durant, Iowa, about 4 p. m., 90th meridian time. The area of low pressure was almost directly east of both of these localities. High winds swept over southeastern Louisiana and southwestern Mississippi early in the morning of the 19th. In two cases the evidence seems to point to tornadic action, viz, in the suburbs of Jackson, Miss., and near Utica, Miss. At the latter place 4 persons were killed and 1 injured. Property loss at both places, about $5,000.

March 22.—A minor tornado passed over Arlington, Ga., at 8.30 a. m., wrecking the Arlington Academy, killing 8 of the pupils and injuring 8 others. But little damage was done outside of that building. Total property loss, about $6,000.

March 28.—A general rain and wind storm prevailed over central and southern Texas, the wind being particularly destructive at Austin and Calvert, where, it is estimated, a property loss to the extent of $15,000 was sustained. The loss to railroads on account of washouts and damages to culverts and bridges was also very great.

March 30.—The first severe and destructive tornado of the year occurred at Chandler, Okla., at about 5.30 p. m., 90th meridian time. Fourteen persons were killed and 40 more or less injured. In answer to a request for information as to the character of this storm, a correspondent writes:

> As near as I can describe, I would compare it with a stream that is very much swollen with heavy rain, the main current going northeast with whirlpools all over its surface; some of the trees and buildings were apparently mashed flat, others were scattered over large territory; some in the track were lying north, while beside them, or probably across them, would be one lying south, and at times there were places where they lay in all directions in a space of a hundred feet. One place in particular I noticed to-day, the first tree was torn up by the roots and lay with its top west; across that, was one broken off with the top north, and across these two was one with the top east, while a few feet away was one with the top south. This occurred at numerous places. In many places it seemed that shoots would go off to one side and literally rip up the trees with a whirling motion, and finally cease, or the track would be lost. The main storm seemed to keep straight along on the ground and was very destructive. I have no idea of the damage, the storm simply wiped the town of buildings with the exception of probably fifteen, and they were more or less injured. The town was about a mile long and probably not over a quarter wide, and the storm struck it about the center.

Another correspondent, after consulting with conservative business men of the town, estimates the property loss at $100,000. The path of greatest destruction was nearly half a mile wide and at least 10 miles long. How much farther it extended is not known.

March 31.—A tornado passed through portions of Cleveland and Lincoln counties, south-central Arkansas, and a less destructive storm visited Jackson County. Details of both storms are awaited.

Deaths by tornado during January, February, and March, 32; by less violent windstorms, 11; total, 43. Deaths by lightning, 14.

TEMPERATURE OF THE AIR.

[In degrees Fahrenheit.]

Both the mean temperatures and the departures from the normal are given in Table I for the regular stations of the Weather Bureau, which also gives the height of the thermometers above the ground at each station. The mean temperature is given for each station in Table II, for voluntary observers.

The *monthly mean temperatures* published in Table I, for the regular stations of the Weather Bureau, are the simple means of all the daily maxima and minima; for voluntary stations a variety of methods of computation is necessarily allowed, as shown by the notes appended to Table II.

The *regular diurnal period* in temperature is shown by the hourly means given in Table V for 29 stations selected out of 82 that maintain continuous thermograph records.

The *distribution of the observed monthly mean* temperature of the air over the United States and Canada is shown by the dotted isotherms on Chart IV; the lines are drawn over the Rocky Mountain Plateau region, although the temperatures have not been reduced to sea level, and the isotherms, therefore, relate to the average surface of the country occupied by our observers; such isotherms are controlled largely by the local topography, and should be drawn and studied in connection with a contour map.

The *highest mean temperatures* were: Key West, 76.5; Jupiter, 73.2; Corpus Christi, 69.2; Port Eads, 66.4. In Canada, Yarmouth, 31.3; Halifax, 29.8; Sydney, 27.0; St. Johns, N. F., 25.4. The lowest were: Williston, 7.8; Havre, 10.9; Bismarck, 11.8; Moorhead, 15.2; Helena, 15.4. In Canada, Battleford, 3.8; Qu'Appelle, 5.4; Medicine Hat, 6.9; Winnipeg, 7.8.

As compared with the normal for March the mean temperature for the current month was in excess throughout the country east of the Mississippi, but was deficient in the upper Missouri Valley, the Rocky Mountain and Pacific Coast regions. The greatest excesses were: In the United States, New Orleans, 6.9; Jacksonville, 6,8; Mobile, 6.7; Tampa, 6.1. In Canada, Toronto, 5.3; Port Arthur, 4.6; Rockliffe, 4.4; Port Stanley, 4.3; Kingston, 4.1. The largest deficits were: Williston, 17.1; Miles City, 15.4; Helena, 12.6; Bismarck, 12.4; Havre, 10.9. In Canada, Edmonton, and Medicine Hat, 16.6; Calgary, 16.4; Swift Current, 16.1.

Considered by districts the mean temperatures of the current month show departures from the normal as given in Table I. The greatest positive departures were: Florida Peninsula, 4.4; east Gulf, 5.5. The greatest negative departures were: North Dakota, 11.6; northern Slope, 9.0; middle Plateau, 8.5.

In Canada.—Prof. R. F. Stupart says:

> The most marked feature of the month was the unusually low temperature which prevailed in the Northwest Territories and British Columbia. In parts of Assiniboia the mean for the month was as much as 20° below average, and in British Columbia it was from 3° to 10° below. Passing eastward in Manitoba, these abnormal conditions became less pronounced; at Winnipeg the average was just maintained, and at the more easterly stations in that province and north of Lake Superior the departure was above instead of below average. In Ontario and Quebec it was from 2° to 5° above, and in the Maritime Provinces differences nowhere great were at some points slightly in excess and at others slightly below the average. (Canadian Weather Map, March, 1897.)

The years of highest and lowest mean temperatures for March are shown in Table I of the REVIEW for March, 1894. The mean temperature for the current month was the highest on record at: Jupiter, 73.2; New Orleans, 69.4; Corpus Christi, 69.2; Jacksonville, 68.8; Pensacola, 66.3; Mobile, 66.2; Montgomery, 63.0; Fort Smith, 54.6. The mean temperature was the lowest on record at: Williston, 7.8; Havre, 10.9; Bismarck, 11.8; Miles City, 15.4; Helena, 21.4; Idaho

Falls, 22.8; Baker City, 28.8; Winnemucca, 31.8; Spokane, 32.8; Salt Lake City, 33.6; Carson City, 33.9; Port Angeles, 38.2; Tatoosh Island, 39.0; Portland, Oreg., 40.5; Fort Canby, 40.9; Astoria, 41.6; Eureka, 45.2; Point Reyes Light, 46.8; Red Bluff, 47.9; Fresno, 48.6; San Francisco, 48.9; Phœnix, 54.3.

The *maximum and minimum temperatures* of the current month are given in Table I. The highest maxima were: 92, Corpus Christi (21st), San Antonia (30th); 88, Tampa (16th), Jacksonville (20th), Jupiter (23d); 87, Augusta (21st); 86, Savannah, Jacksonville, and Shreveport (20th), Charleston, (21st), Yuma (25th), Vicksburg (30th). The lowest maxima were: 42 Duluth (21st); 46, Havre (28th), Eastport (30th); 47, Williston (29th); 48, Idaho Falls (25th), Bismarck (29th); 49, Northfield (19th), Block Island and Marquette (29th). The highest minima were: 65, Key West (28th); 51, Galveston (23d); 50, Tampa (1st), Port Eads, (frequently), New Orleans (25th); 49, Jupiter (27th). The lowest minima were: —41, Havre (13th); —36, Bismarck (15th); —35, Williston (14th); —32, Moorhead (15th); —26, Miles City (13th); —25, Huron (14th).

The *limits of minimum temperatures*, 32° and 40°, are shown by lines on Chart No. V.

The *years of highest maximum and lowest minimum temperatures* for March are given in the last four columns of Table I of the REVIEW for 1896. During the current month the maximum temperatures were equal to or above the highest on record at: Corpus Christi, 92; Jacksonville, Tampa, and Jupiter, 88; Vicksburg and Charleston, 86; New Orleans, 84. The minimum temperatures were equal to or below the lowest on record at: Havre, —41; Bismarck, —36; Williston, —35; Moorhead, —32; Miles City, —26; Huron, —25; Northfield, —18; Idaho Falls, —16; Baker City, 0; Carson City, 10; Astoria, 24.

The *greatest daily range of temperature and the data for computing the extreme and mean monthly ranges* are given for each of the regular Weather Bureau stations in Table I. The largest values of the greatest daily ranges were: Havre, 57; Williston, 53; Dodge City, 47; Northfield, 46; Rapid City, 44; Sioux City, Wichita, Pueblo, and El Paso, 43. The smallest values were: Tatoosh Island, 11; Key West, 13; Fort Canby and Point Reyes Light, 14; San Francisco, 15; Astoria and Galveston, 19; Port Eads and Nantucket, 20.

Among the *extreme monthly ranges* the largest were: Havre, 87; Moorhead, 86; Bismarck and Rapid City, 84; Williston, 82; Miles City and Fort Smith, 79; Huron, 77; Concordia, 75. The smallest values were: Key West and Point Reyes Light, 19; San Francisco, 24; Tatoosh Island and Fort Smith, 25; Pysht, 27; Galveston and Port Eads, 28.

Accumulated monthly departures from normal temperatures from January 1 to the end of the current month are given in the second column of the following table, and the average departures are given in the third column for comparison with the departures of current conditions of vegetation from the normal condition.

Districts.	Accumulated departures.		Districts.	Accumulated departures.	
	Total.	Average.		Total.	Average.
	°	°		°	°
New England	+ 3.6	+ 1.2	North Dakota	— 8.8	— 2.9
Middle Atlantic	+ 2.1	+ 0.7	Northern Slope	— 4.6	— 1.5
South Atlantic	+ 0.7	+ 0.2	Southern Plateau	— 5.7	— 1.9
Florida Peninsula	+ 3.9	+ 1.3	Middle Plateau	— 8.8	— 2.9
East Gulf	+ 2.2	+ 0.7	North Pacific	— 2.6	— 0.9
West Gulf	+ 5.8	+ 1.9	Middle Pacific	— 5.8	— 1.9
Ohio Valley and Tenn.	+ 3.0	+ 1.0	South Pacific	— 4.1	— 1.4
Lower Lake	+ 3.9	+ 1.3			
Upper Lake	+ 7.8	+ 2.6			
Upper Mississippi Valley	+ 3.3	+ 1.1			
Missouri Valley	+ 1.4	+ 0.5			
Middle Slope	+ 2.0	+ 0.7			
Southern Slope	+ 1.2	+ 0.4			
Northern Plateau	+ 3.0	+ 1.0			

MOISTURE.

The *quantity of moisture* in the atmosphere at any time may be expressed by the weight of the vapor coexisting with the air contained in a cubic foot of space, or by the tension or pressure of the vapor, or by the temperature of the dew-point. The mean dew-point for each station of the Weather Bureau, as deduced from observations made at 8 a. m. and 8 p. m., daily, is given in Table I.

The *rate of evaporation* from a special surface of water on muslin at any moment determines the temperature of the wet-bulb thermometer. The mean wet-bulb temperature is now published in Table I; it is always intermediate, and generally about half way between the temperature of the air and of the dew-point. The quantity of water evaporated in a unit of time from the muslin surface may be considered as depending essentially upon the wet-bulb temperature, the dew-point, and the wind.

The *relative humidity*, or the ratio between the moisture that is present in the air and the moisture that it would contain if saturated at its observed temperature is given in Table I as deduced from the 8 a. m. and 8 p. m. observations. The general average for a whole day or any other interval would properly be obtained from the data given by an evaporometer, but may also be obtained, approximately, from frequent observations of the relative humidity.

PRECIPITATION.

[In inches and hundredths.]

The *distribution of precipitation* for the current month, as determined by reports from about 2,500 stations, is exhibited on Chart III. The numerical details are given in Tables I, II, and III. The total precipitation for the current month exceeded 10 inches on the coast of Oregon and Washington, as also over a large portion of Arkansas, southern Missouri, Illinois, Indiana, northern Alabama, Mississippi, and the greater part of Georgia and Tennessee; it exceeded 18 inches in the central portion of this region. The rainfall was less than 1 inch in southern Florida and the southern Plateau Region. The larger values for regular stations were: Montgomery, 12.02; Tatoosh Island, 11.31; Astoria, 11.88; Little Rock, 10.43; Memphis, 10.04; Chattanooga, 11.23.

Details as to *excessive precipitation* for March are given in Tables XI and XII.

The *years of greatest and least precipitation* for March are given in the REVIEW for March, 1890. The precipitation for the current month was the greatest on record at: Montgomery, 12.02; Little Rock, 10.43; Cincinnati, 9.89; St. Louis, 8.25; Columbus, Mo., 5.33; Abilene, 4.02; Idaho Falls, 3.84; Minneapolis, 3.05; Carson City, 2.78; Cheyenne, 2.32; Santa Fe, 2.06. It was the least on record at: Tampa, 1.44; Wilmington, 1.23.

The *diurnal variation*, as shown by tables of hourly means of the total precipitation, deduced from the self-registering gauges kept at the regular stations of the Weather Bureau, is not now tabulated.

The *current departures* from the normal precipitation are given in Table I, which shows that precipitation was in excess in the valleys of the Ohio, Tennessee, and Arkansas, as also in Ontario, Canada. The large excesses were: Cincinnati, 6.6; Montgomery, 5.6; Chattanooga and Little Rock, 5.2; St. Louis and Astoria, 4.8; Knoxville, Memphis, and Palestine, 4.2. In Canada, Port Stanley, 1.6; Rockville, 1.4. The large deficits were: Wilmington, 2.7; Hatteras, 2.3; Atlantic City, 1.10. In Canada, Sydney, 1.1; Chatham, 1.0.

The *average departure* for each district is given in Table I. By dividing each current precipitation by its respective normal the following corresponding percentages are obtained (precipitation is in excess when the percentage of the normal exceeds 100):

Above the normal: East Gulf, 105; west Gulf, 165; Ohio Valley and Tennessee, 177; lower Lake, 123; upper Lake, 149; North Dakota, 171; upper Mississippi, 181; Missouri Valley, 141; northern Slope, 200; middle Slope, 120; southern Slope, 267; southern Plateau, 136; middle Plateau, 121; northern Plateau, 159; north Pacific, 129; middle Pacific, 122.

Below the normal: New England, 83; middle Atlantic, 74; south Atlantic, 85; Florida Peninsula, 86; south Pacific, 95.

The *total accumulated monthly departures* from January 1 to the end of the current month are given in the second column of the following table: The third column gives the percentage of the current accumulated precipitation relative to its normal value.

Districts.	Accumulated departures.	Accumulated precipitation.	Districts.	Accumulated departures.	Accumulated precipitation.
	Inches.	*Per ct.*		*Inches.*	*Per ct.*
South Atlantic	+ 0.30	102	New England	— 2.40	79
Florida Peninsula	+ 0.40	105	Middle Atlantic	— 2.00	82
West Gulf	+ 0.60	106	East Gulf	— 0.30	98
Ohio Valley and Tenn.	+ 2.30	118	Lower Lake	— 0.50	94
North Dakota	+ 1.60	171	Upper Lake	— 0.10	99
Upper Mississippi Valley.	+ 3.30	157			
Missouri Valley	+ 2.40	156			
Northern Slope	+ 0.80	139			
Middle Slope	+ 0.90	128			
Abilene (southern Slope)	+ 1.40	147			
Southern Plateau	+ 1.70	187			
Middle Plateau	+ 1.50	134			
Northern Plateau	+ 0.60	111			
North Pacific	+ 1.00	105			
Middle Pacific	+ 0.40	103			
South Pacific	+ 2.20	135			

SNOWFALL.

The *total monthly snowfall* at each station is given in Tables I and II; its geographical distribution is shown on Chart V. This chart also shows the isotherms of minimum 32° and of minimum 40° for the air within the ordinary thermometer shelter. The former isotherm is an approximate limit to possible snow, while the latter is an approximate southern limit to the regions that report frost in exposed localities.

Snowfalls of from 1 to 10 inches were reported from the interior of the Middle Atlantic States; from 5 to 40 inches in New England; 5 to 10 in the lower Lake Region; 10 to 40 in the upper Lake Region and a narrow belt extending westward into the Dakotas. The heaviest snows reported in the Rocky Mountain Region were: in Colorado, 210; Utah, 52; Idaho, 62; Nevada and California, 152; Washington, 42; Oregon, 139.

The *depth of snow on the ground* at the end of the month is shown on Chart VI; it is also shown on the weekly charts of the Climate and Crop Service. At the close of March the distribution of snow on the ground was very irregular, and is, therefore, shown by the maximum figures given on Chart VI, 10 inches or more were found in northern New Hampshire, Minnesota, and North Dakota.

In Canada.—The following items are gathered from the map for March, published by Prof. R. F. Stupart:

British Columbia; on the French northwest coast snow had disappeared except on the mountains; Craigellachi (latitude, 51° 0′ north,; longitude, 118° 40′ west), at the foot of the Selkirks, 13 inches of snow, but going fast; at other stations to the southward there was also much snow on the ground, but thawing fast. Alberta; Edmonton, 2 feet of snow in the country districts; Calgary, heavy snow drifts impeding travel, but rapidly disappearing. Assiniboia; Medicine Hat, no snow, ice rapidly breaking up in the South Saskatchewan River; Swift Current, only small patches of snow left on a level, but hills and ravines not yet bare; Qu'Appelle, snow going fast. Saskatchewan; Prince Albert, snow disappearing fast. Manitoba, Minnedosa, great quantities of snow, roads almost impassable, but bare patches on the hills. Ontario; Port Arthur, as yet there are very few bare places to be seen on the hills and sleighing is very good. New Brunswick and Quebec, much snow still left. Nova Scotia, the greater part clear of snow.

ICE.

The *thickness of ice* in the rivers and harbors is shown in detail in the bulletins published every Monday by the Weather Bureau, and is also given in some detail in the chapter on "River and Flood Service." The more prominent characteristic data for the first and last Mondays, March 1 and 29, respectively, are:

Maine, Eastport, 21 and 17 inches, Gardiner, 15 and 7, Lewiston, 23 and 12; Michigan, Marquette, 2.5 and 7.0, Sault Ste. Marie, 16 and 15; Minnesota, Duluth, 24.5 and 19, Moorhead, 36 and 38; North Dakota, Bismarck, 35 and 32, Williston, 34 and 34.

The reports of ice in rivers on the 29th were as follows: Androscoggin, Lewiston, Me., ice not yet out of the river. Hudson River, Albany, no ice in the Mohawk and lower Hudson. Mississippi River, St. Paul, ice mostly gone out; St. Louis, rivers open and free from ice. Lake Erie, Buffalo, drift ice covers the lake; Cleveland, no ice in sight. Lake St. Clair, with the Detroit and St. Clair rivers, practically free of ice. Lake Huron, Port Huron, no ice in the lower end of the lake; the first boat down Lake Huron opened navigation on the 27th, and the first steamer from Detroit opened navigation on the 25th. Lake Michigan, Straits of Mackinac, still filled with solid ice; Milwaukee, river and harbor and lake clear of ice: Grand Haven, river and harbor free from ice and very little in the lake. Lake Superior, Sault Ste. Marie, ice 15 inches thick in the harbor, but the river channel is open; Marquette, ice 1 inch thicker than last week and extends 30 miles from the shore, having drifted with high north winds; Duluth, ice from 2 to 4 inches thinner than last week, but firm as far as can be seen from shore. For further details see the weekly Snow and Ice Chart.

In Canada.—Prof. R. F. Stupart reports:

Alberta, Bow River, Calgary, 36 inches. Saskatchewan, Battleford, 24. Assiniboia, Swift Current Creek, Swift Current, 28. Ontario, Lake Superior, Thunder Bay, 16; White River, White River station, 18; Lake Ontario, Bay of Quintei, Kingston, 8; Ottawa River, Rockliffe, 18; Georgian Bay, Midland, 16. New Brunswick, Miramichi River, Chatham, 14. Prince Edward Island, Hillsboro Bay, Charlottetown, 7. Cape Breton, Sydney River, Sydney, 18. New Brunswick, Passamaquoddy Bay, St. Andrews, 20.

The preceding data is taken from the monthly map for March, but the names of the rivers and bays have been added by the Editor.

HAIL.

The following are the dates on which hail fell in the respective States:

Alabama, 14, 21, 22, 23. Arizona, 15. Arkansas, 7, 15, 21. California, 1, 5, 6, 10, 14, 16 to 19, 28. Colorado, 7, 16. Connecticut, 24. Georgia, 11, 12, 31. Idaho, 25. Illinois, 8 to 11, 19 to 23, 31. Indiana, 8, 9, 10, 19, 21 to 24. Indian Territory, 4, 9, 11, 13, 30, 31. Iowa, 4, 5, 7, 8, 21, 28. Kansas, 4, 18, 19, 28, 30, 31. Kentucky, 9, 15, 21, 22, 23, 31. Louisiana, 15, 21, 22, 31. Maryland, 3, 24. Michigan, 20. Minnesota, 27. Mississippi, 10 to 13, 19, 22, 30, 31. Missouri, 4, 8, 9, 19, 20, 28, 30, 31. Nebraska, 7, 28, 30, 31. New Jersey, 19, 24. New Mexico, 15, 16. New York, 20. North Carolina, 13, 15. Ohio, 8, 9, 21, 22, 24. Oklahoma, 18, 30. Oregon, 5, 6, 8 to 11, 16 to 20, 23, 25 to 30. Pennsylvania, 20. Tennessee, 3, 11, 12, 13, 22, 23, 31. Texas, 4, 5, 10, 14, 15, 18, 21, 28, 30, 31. Vermont, 20. Virginia, 24. Washington 4. Wyoming, 29.

SLEET.

The following are the dates on which sleet fell in the respective States:

Arkansas, 15. California, 1, 2, 3, 5 to 11, 13, 18, 19, 20, 28, 29. Colorado, 1, 2, 6, 7, 16, 30, 31. Connecticut, 5, 14. District of Columbia, 6. Idaho, 6, 9, 10, 13, 17, 19, 23 to 29. Illinois, 1 to 4, 7, 8, 9, 12, 13, 19, 20, 21, 23, 24, 28. Indiana, 1, 2, 3, 8, 13, 14, 23. Indian Territory, 3. Iowa, 1, 2, 4 to 7, 9, 11, 13, 21, 28. Kansas, 1 to 4, 6, 13, 14, 21, 22, 23, 31. Kentucky, 15, 24, 25. Maine, 3, 5, 9, 10, 21, 24, 28. Maryland, 4 to 7, 12, 13, 14, 24. Massachusetts, 5, 14, 20, 24. Michigan, 1 to 5, 8, 9, 13, 14, 19, 23, 25, 28, 29. Minnesota, 1, 4, 5, 8, 16 to 19. Missouri, 1 to 4, 7, 8, 11, 13, 21, 23, 25, 31. Montana, 18, 30. Nebraska, 4, 6, 7, 9, 18, 21, 30, 31. Nevada, 1, 2, 3, 5, 7, 8, 16, 17, 19, 28, 29. New Hampshire, 3, 5, 12, 20, 22. New Jersey, 5, 14, 24. New York, 1, 2, 5, 8, 13, 14, 22, 24. North Dakota, 8, 17, 20, 27, 28, 29. Ohio, 1, 2, 4, 5, 14, 20 to 25. Oklahoma, 2. Oregon, 4, 5, 8, 9, 10, 16 to 21, 27 to 31. Pennsylvania, 4, 5, 9, 12, 14, 20, 23, 24, 25, 27. South Dakota, 4, 7, 8, 11, 23, 24, 28. Tennessee, 12, 14, 15, 24. Utah, 1, 4 to 8, 12, 16 to 20, 28, 29, 30. Vermont, 2, 3, 5. Virginia, 5, 6, 9, 13, 14, 15. Washington, 4, 5, 7 to 11, 16 to 22, 25 to 27. West Virginia, 14. Wisconsin, 4, 5, 7, 8, 19, 29.

WIND.

The *prevailing winds* for March, 1897, viz, those that were recorded most frequently, are shown in Table I for the regular Weather Bureau stations.

The *resultant winds*, as deduced from the personal observations made at 8 a. m. and 8 p. m., are given in Table VIII. These latter resultants are also shown graphically on Chart IV, where the small figure attached to each arrow shows the number of hours that this resultant prevailed, on the assumption that each of the morning and evening observations represents one hour's duration of a uniform wind of average velocity. These figures indicate the relative extent to which winds from different directions counterbalanced each other.

HIGH WINDS.

Maximum wind velocities are given in Table I, which also gives the altitudes of the Weather Bureau anemometers above the ground. Maxima of 50 miles or more per hour were reported during this month at regular stations of the Weather Bureau as follows (maximum velocities are averages for five minutes; extreme velocities are gusts of shorter duration, and are not given in this table):

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
		Miles				*Miles*	
Amarillo, Tex	19	52	w.	Erie, Pa	14	54	s.
Do	30	64	sw.	Fort Canby, Wash	17	66	s.
Atlanta, Ga	14	52	n.	Do	25	95	s.
Do	19	50	sw.	Do	27	82	s.
Buffalo, N. Y	5	54	w.	Lexington, Ky	5	50	sw.
Do	12	76	w.	New York, N. Y	13	52	nw.
Do	14	69	w.	Do	24	57	w.
Cairo, Ill	5	56	s.	Do	25	54	w.
Do	18	54	sw.	Northfield, Vt	6	50	nw.
Do	28	52	sw.	Portland, Oreg	25	55	s.
Cleveland, Ohio	5	50	se.	Port Huron, Mich	12	52	sw.
Do	12	52	w.	Do	14	50	sw.
Do	14	56	w.	Pueblo, Colo	31	54	nw.
Do	24	53	nw.	Tatoosh Island, Wash	10	60	nw.
Dodge City, Kans	30	51	sw.	Do	25	60	w.
Eastport, Me	12	50	se.	Vicksburg, Miss	14	52	n.
El Paso, Tex	4	60	sw.	Winnemucca, Nev	28	66	sw.
Do	20	52	sw.	Woods Hole, Mass	12	56	s.
Do	28	51	w.	Do	25	60	w.
Do	30	56	nw.				

SUNSHINE AND CLOUDINESS.

The quantity of sunshine, and therefore of heat, received by the atmosphere as a whole is very nearly constant from year to year, but the proportion received by the surface of the earth depends upon the absorption by the atmosphere, and varies largely with the distribution of cloudiness. The sunshine is now recorded automatically at 22 regular stations of the Weather Bureau by its photographic, and at 37 by its thermal effects; at one of these stations records are kept by both methods. The photographic record sheets show the apparent solar time, but the thermometric records show seventy-fifth meridian time; for convenience the results are all given in Table X for each hour of local mean time. In order to complete the record of the duration of cloudiness these registers are supplemented by special personal observations of the state of the sky near the sun in the hours after sunrise and before sunset, and the cloudiness for these hours has been added as a correction to the instrumental records, whence there results a complete record of the duration of sunshine from sunrise to sunset.

The average cloudiness of the whole sky is determined by numerous personal observations at all stations during the daytime, and is given in the column "average cloudiness" in Table I; its complement, or percentage of clear sky, is given in the last column of Table X.

COMPARISON OF DURATIONS AND AREAS.

The sunshine registers give the *durations* of effective sunshine whence the durations relative to possible sunshine are derived; the observers' personal estimates give the percentage of *area* of clear sky. These numbers have no necessary relation to each other, since stationary banks of clouds may obscure the sun without covering the sky, but when all clouds have a steady motion past the sun and are uniformly scattered over the sky, the percentages of duration and of area agree closely. For the sake of comparison, these percentages have been brought together, side by side, in the following table, from which it appears that, in general, the instrumental records of percentages of durations of sunshine are almost always larger than the observers' personal estimates of percentages of area of clear sky; the average excess for March, 1897, is 8 per cent for photographic and 7 per cent for thermometric records.

The details are shown in the accompanying table, in which the stations are arranged according to the *total possible* duration of sunshine, and not according to the *observed* duration.

Difference between instrumental and personal observations of sunshine.

Stations.	Latitude.	Apparatus.	Total possible duration for the whole month.	Personal estimated area of clear sky.	Instrumental record of sunshine.			
					Photographic.	Difference.	Thermometric.	Difference.
	° ′		*H'rs.*	%	%	%	%	%
Tampa, Fla	27 57	T.	372.8	59	.....	.....	64	+ 5
Galveston, Tex	29 18	P.	372.6	35	35	0	.....	.....
New Orleans, La	29 58	T.	372.5	36	.....	.....	36	0
Savannah, Ga	32 05	P.	372.1	36	40	+ 4	.....	.....
Vicksburg, Miss	32 22	T.	372.1	54	.....	.....	54	0
San Diego, Cal	32 43	P.	372.3	57	68	+11	.....	.....
Charleston, S.C.*	32 47	T.	.....	36	.....	.....	.....	.....
Phœnix, Ariz	33 28	P.	372.3	77	83	+ 6	.....	.....
Atlanta, Ga	33 45	T.	372.3	22	.....	.....	26	+ 4
Los Angeles, Cal	34 03	P.	372.3	57	70	+13	.....	.....
Wilmington, N. C	34 14	T.	372.3	47	.....	.....	51	+ 4
Little Rock, Ark	34 45	T.	372.1	41	.....	.....	52	+11
Chattanooga, Tenn	35 04	T.	372.1	30	.....	.....	25	− 5
Santa Fe, N. Mex	35 41	P.	371.9	63	75	+12	.....	.....
Raleigh, N. C	35 45	T.	371.9	36	.....	.....	48	+12
Nashville, Tenn	36 10	T.	371.9	38	.....	.....	50	+12
Fresno, Cal	36 43	T.	371.7	66	.....	.....	63	− 3
Dodge City, Kans	37 45	P.	371.4	58	59	+ 1	.....	.....
San Francisco, Cal	37 48	T.	371.4	54	.....	.....	62	+ 8
Louisville, Ky	38 15	T.	371.4	32	.....	.....	47	+15
St. Louis, Mo	38 38	T.	371.4	32	.....	.....	46	+14
Washington, D. C	38 54	P.	371.4	49	58	+ 9	.....	.....
Kansas City, Mo	39 05	P.	371.4	43	43	0	.....	.....
Cincinnati, Ohio	39 06	T.	371.4	35	.....	.....	44	+ 9
Baltimore, Md	39 18	T.	371.4	43	.....	.....	50	+ 7

Difference between instrumental and personal observations.—Cont'd.

Stations.	Latitude.	Apparatus.	Total possible duration for the whole month.	Personal estimated area of clear sky.	Instrumental record of sunshine.			
					Photographic.	Difference.	Thermometric.	Difference.
	° ′		*Hrs.*	%	%	%	%	%
Atlantic City, N. J	39 22	P.	371.4	41	50	+ 9	.....	.....
Denver, Colo	39 45	P.	371.2	43	64	+21	.....	.....
Indianapolis, Ind	39 46	T.	371.2	36	.....	.....	51	+15
Philadelphia, Pa	39 57	T.	371.2	41	.....	.....	59	+18
Columbus, Ohio	39 58	T.	371.2	30	.....	.....	33	+ 3
Pittsburg, Pa *	40 32	T.	.....	34	.....	.....	.....	.....
New York, N. Y	40 43	T.	371.2	42	.....	.....	53	+11
Salt Lake City, Utah	40 46	P.	371.2	20	46	+26	.....	.....
Eureka, Cal	40 48	P.	371.2	36	43	+ 7	.....	.....
Cheyenne, Wyo	41 08	P.	371.2	49	58	+ 9	.....	.....
Omaha, Nebr	41 16	P.	371.2	32	42	+10	.....	.....
Cleveland, Ohio	41 30	T.	370.8	42	.....	.....	46	+ 4
Des Moines, Iowa	41 35	T.	370.8	37	.....	.....	40	+ 3
Chicago, Ill	41 53	T.	370.8	46	.....	.....	50	+ 4
Erie, Pa	42 07	T.	370.8	34	.....	.....	51	+17
Binghamton, N. Y	42 08	T.	370.8	37	.....	.....	38	+ 1
Detroit, Mich	42 20	T.	370.8	39	.....	.....	50	+11
Boston, Mass	42 21	T.	370.8	39	.....	.....	44	+ 5
Dubuque, Iowa	42 30	T.	370.8	42	.....	.....	41	− 1
Albany, N. Y	42 39	T.	370.9	40	.....	.....	59	+19
Buffalo, N. Y. *	42 53	T.	.....	39	.....	.....	.....	.....
Rochester, N. Y	43 08	T.	370.9	42	.....	.....	44	+ 2
Idaho Falls, Idaho	43 29	T.	370.9	40	.....	.....	41	+ 1
Portland, Me	43 39	T.	370.7	45	.....	.....	58	+15
Northfield, Vt	44 10	P.	370.7	32	43	+11	.....	.....
Eastport, Me	44 54	P.	370.7	35	42	+ 7	.....	.....
St. Paul, Minn	44 58	P.	370.7	37	38	+ 1	.....	.....
Minneapolis, Minn	44 59	T.	370.7	.....	.....	.....	39	.....
Portland, Oreg	45 32	T.	370.3	31	.....	.....	27	− 4
	45 32	P.	370.3	31	24	.....	.....	− 7
Helena, Mont	46 34	P.	370.3	43	48	+ 5	.....	.....
Bismarck, N. Dak	46 47	P.	370.3	54	60	+ 6	.....	.....
Seattle, Wash	47 38	T.	370.1	36	.....	.....	46	+10
Spokane, Wash	47 40	P.	.....	34	.....	.....	.....	.....

* Record incomplete.

ATMOSPHERIC ELECTRICITY.

Numerical statistics relative to auroras and thunderstorms are given in Table IX, which shows the number of stations from which meteorological reports were received, and the number of such stations reporting thunderstorms (T) and auroras (A) in each State and on each day of the month, respectively.

Thunderstorms.—The dates on which reports of thunderstorms for the whole country were most numerous were: 8th, 213; 9th, 152; 19th, 148; 21st, 189; 31st, 166.

Thunderstorm reports were most numerous in: Illinois, 174; Missouri, 250; Ohio, 165; Tennessee, 156.

Thunderstorms were most frequent in: Arkansas, Louisiana, South Carolina, 22 days; Mississippi, 25; Missouri, 23; Tennessee, 20.

Auroras.—The evenings on which bright moonlight must have interfered with observations of faint auroras are assumed to be the four preceding and following the date of full moon, viz, from the 14th to the 22d, inclusive. On the remaining twenty-two days of this month 157 reports were received, or an average of about 7 per day. The dates on which the number of reports for the whole country especially exceeded this average were: 3d, 24; 4th, 37; 22d, 31; 28th, 20.

Auroras were reported most frequently in: Maine, 17; Michigan and New Jersey, 16; North Dakota, 48; Wisconsin, 19.

The number of reports was a large percentage of the number of observers in: Maine, 131; North Dakota, 123; New Hampshire, 69; Wisconsin, 33.

CANADIAN REPORTS.

Thunderstorms were reported as follows: Grand Manan, 24th; Ottawa, 20th; Port Stanley, 8th, 20th; Winnipeg, 29th; Esquimalt, 27th.

Auroras were reported as follows: St. Andrews, 4th; Father Point, 4th, 7th, 8th, 23d, 27th, 28th, 29th; Quebec, 4th, 8th, 29th; Montreal, 4th, 28th; Toronto, 22d; White River, 3d, 12th, 24th, 26th, 27th; Port Stanley, 22d; Port Arthur, 22d; Winnipeg, 1st, 3d, 10th, 12th, 21st to 26th, 28th, 29th; Minnedosa, 1st, 2d, 4th, 5th, 6th, 10th, 22d; Medicine Hat, 8th, 22d, 29th; Prince Albert, 5th, 22d, 27th, 28th; Battleford, 4th, 10th, 22d, 23d; Kamloops, 8th; Banff, 21st, 30th, 31st.

CLIMATE AND CROP SERVICE.

By JAMES BERRY, Chief of Climate and Crop Service Division

The following extracts relating to the general weather conditions in the several States and Territories are taken from the monthly reports of the respective sections of the Climate and Crop Service. The name of the section director is given after each summary.

Snowfall and rainfall are expressed in inches.

Alabama.—The mean temperature was 60.0°, or 5.9° above normal; the highest was 89°, at Elba on the 13th, and the lowest, 22°, at Goodwater on the 1st. The average precipitation was 9.59, or 3.83 above normal; the greatest monthly amount, 20.83, occurred at Newburg, and the least, 4.29, at Livingston.—*F. P. Chaffee.*

Arizona.—The mean temperature was 50.3°, or 3.3° below normal; the highest was 94°, at Buckeye on the 19th, and the lowest, 10°, at Flagstaff on the 23d. The average precipitation was 0.66, or 0.43 below normal; the greatest monthly amount, 3.09, occurred at Pinal Ranch, while none fell at San Simon, and only traces at Potano and Tuba.—*W. T. Blythe.*

Arkansas.—The mean temperature was 56.0°, or 5.3° above normal; the highest was 88°, at Texarkana on the 21st and at Elon on the 30th, and the lowest, 13°, at Silver Springs on the 14th. The average precipitation was 9.72, or 4.91 above normal; the greatest monthly amount, 17.04, occurred at Moore, and the least, 4.93, at Texarkana.—*G. G. Harkness.*

California.—The mean temperature was 48.0°, or 5.0° below normal; the highest was 98°, at Volcano Springs on the 25th, and the lowest, 14° below zero, at Bodie on the 8th. The average precipitation was 3.98, or 0.55 above normal; the greatest monthly amount, 19.12, occurred at Bear Valley, while none fell at Needles, Ogilby, Palm Springs, Salton, and Volcano Springs.—*J. A. Barwick.*

Colorado.—The mean temperature was 30.9°, or 1.7 below normal; the highest was 78°, at Lamar on the 28th, and the lowest, 21° below zero, at Breckenridge on the 22d. The average precipitation was 2.37, or 1.14 above normal; the greatest monthly amount, 21.00, occurred at Ruby, and the least, 0.15, at Holly.—*F. H. Brandenburg.*

Florida.—The mean temperature was 70.6°, or nearly 4.0° above normal; the highest was 94°, at Archer on the 15th, and the lowest, 33°, at Fort Meade on the 26th. The average precipitation was 2.06, or 0.94 below normal; the greatest monthly amount, 8.64, occurred at Tallahassee, while none fell at Oxford.—*A. J. Mitchell.*

Georgia.—The average temperature was 59.2°, or 4.6° above normal; the highest was 90°, at Millen on the 22d, and the lowest, 23°, at Covington on the 27th, and at Diamond on the 28th. The average precipitation was 8.26, or 3.02 above normal; the greatest monthly amount, 13.31, occurred at Morgan, and the least, 4.12, at Quitman. At Fort Gaines 9.51 fell in twenty-four hours on the 23d.—*J. B. Marbury.*

Idaho.—The mean temperature was 27.8°; the highest was 67°, at Oakley on the 25th, and the lowest, 30° below zero, at Maryville on the 13th. The average precipitation was 2.51; the greatest monthly amount, 6.49, occurred at Idaho City, and the least, 0.10, at Blackfoot and Oakley. The month was stormy and unusually cold.—*D. P. McCallum.*

Illinois.—The mean temperature was 1.8° above normal; the highest was 79°, at Golconda on the 21st, and the lowest, 2° below zero, at Chemung on the 4th. The average precipitation was 5.96, or 3.18 above normal; the greatest monthly amount, 12.63, occurred at Cobden, and the least, 2.63, at Monmouth.—*C. E. Linney.*

Indiana.—The mean temperature was 42.5°, or 4.3° above normal;

the highest was 82°, at Washington on the 21st, and the lowest, 9°, at Greencastle on the 2d. The average precipitation was 6.66, or 3.27 above normal; the greatest monthly amount, 13.22, occurred at Vincennes, and the least, 2.42, at Auburn.—*C. F. R. Wappenhans.*

Iowa.—The mean temperature was 32.0°, or 0.5° above normal; the highest was 72°, at Bonaparte on the 19th, and the lowest, 22° below zero, at Rock Rapids on the 14th. The average precipitation was 2.39, or 0.36 above normal; the greatest monthly amount, 6.16, occurred at Stuart, and the least, 0,39, at Ames.—*G. M. Chappel.*

Kansas.—The mean temperature was 42.5°, or 1.3° above normal; the highest was 90°, at Meade on the 26th, and the lowest, 5° below zero, at Achilles on the 13th and at Seneca on the 14th. The average precipitation was 1.97, or 0.49 above normal; the greatest monthly amount, 5.47, occurred at Fort Scott, and the least, trace, at Meade.—*T. B. Jennings.*

Kentucky.—The mean temperature was 49.6°, or 5.0° above normal; the highest was 86°, at Greensburg on the 21st, and the lowest, 20°, at Eubank on the 28th, and at Mount Sterling on the 27th. The average precipitation was 7.94, or 3.64 above normal; the greatest monthly amount, 12.57, occurred at Earlington, and the least, 4.04, at Sandyhook.—*Frank Burke.*

Louisiana.—The mean temperature was 66.2°, or 6.8° above normal; the highest was 92°, at Donaldsonville on the 20th, and the lowest, 29°, at Liberty Hill on the 24th. The month was the warmest March on record. The average precipitation was 5.43, or 0.65 above normal; the greatest monthly amount, 7.81, occurred at Farmerville, and the least, 1.48, at Houma.—*R. E. Kerkam.*

Maryland.—The mean temperature was 44.4°, or 3.8° above normal; the highest was 82°, at Washington, D. C., on the 22d, and the lowest, 12°, at Deer Park, on the 1st. The average precipitation was 2.93, or 0.65 below normal; the greatest monthly amount, 5.05, occurred at Cherryfields, and the least, 2.04, at Milford.—*G. E. Hunt.*

Michigan.—The mean temperature was 29.4°, or 1.0° above normal; the highest was 70°, at Mottville on the 30th, and the lowest, 35° below zero, at Humboldt on the 2d. The average precipitation was 2.99, or 1.60 above normal; the greatest monthly amount, 4.69, occurred at Grand Rapids, and the least, 0.60, at Manistee.—*C. F. Schneider.*

Minnesota.—The average temperature was 20.7°, or 3.5° below normal; the highest was 68°, at Wabasha on the 30th, and the lowest, 49° below zero, at Pokegama on the 15th. The average precipitation was 2.07, or 0.62 above normal; the greatest monthly amount, 4.81, occurred at Lutsen, and the least, 0.33, at Ada.—*T. S. Outram.*

Mississippi.—The mean temperature was 62.7, or 6.0 above normal; the highest was 91°, at Yazoo City on the 31st, and the lowest, 24°, at Waynesboro on the 1st. The average precipitation was 8.24, or 2.09 above normal; the greatest monthly amount, 19.12, occurred at Fulton.—*R. J. Hyatt.*

Missouri.—The mean temperature was 44.0°, or 2.9° above normal; the highest was 93°, at Neosho on the 31st, and the lowest, 5° below zero, at Pickering on the 14th. The average precipitation was 6.20, or 3.58 above normal; the greatest monthly amount, 15.23, occurred at Gordonville, and the least, 1.51, at Maryville.—*A. E. Hackett.*

Montana.—The mean temperature was 21.0°, or 7.0° below normal; the highest was 70°, at St. Ignatius Mission on the 1st, and at Fort Benton on the 25th, and the lowest, 41° below zero, at Havre on the 13th. The month was the coldest March on record. The average precipitation was 0.13 above normal; the greatest monthly amount, 3.50, occurred at Miles City, and the least, trace, at Manhattan.—*R. M. Crawford.*

Nebraska.—The mean temperature was 34.2°, or 0.1° below normal; the highest was 82°, at McCook on the 18th, and the lowest, 14° below zero, at Fort Robinson and Norfolk on the 13th. The average precipitation was 1.49, or 0.31 above normal; the greatest monthly amount, 4.25, occurred at Milford, and the least, 0.26, at Dunning.—*G. A. Loveland.*

Nevada.—The mean temperature was 30.9°, or 7.6° below normal; the highest was 79°, at Candelaria on the 25th, and the lowest, 19° below zero, at Hamilton on the 22d. The average precipitation was 1.39, or 0.20 above normal; the greatest monthly amount, 4.34, occurred at Lewers Ranch, and the least, trace, at Hot Springs.—*R. F. Young.*

New England.—The mean temperature was 32.4°, or 1.8° above normal; the highest was 66°, at Colchester, Conn., on the 23d, and the lowest, 28° below zero, at Fairfield, Me., and at Lancaster, N. H., on the 1st. The average precipitation was 3.63, or 0.53 below normal; the greatest monthly amount, 5.80, occurred at Jacksonville, Vt., and the least, 2.01, at Cornwall, Vt.—*J. W. Smith.*

New Jersey.—The mean temperature was 40.0°, or 2.8° above normal; the highest was 77°, at Vineland on the 22d, and the lowest, 8°, at Charlotteburg on the 1st. The average precipitation was 2.78, or 1.19 below normal; the greatest monthly amount, 4.32, occurred at Chester, and the least, 1.55, at Egg Island.—*E. G. McGann.*

New Mexico.—The mean temperature was considerably below normal; the highest was 83°, at Eddy on the 27th, and the lowest, 11° below zero, at Chama and Goldhill on the 22d, and at Buckmans on the 23d. The average precipitation was above normal; the greatest monthly amount, 5.53, occurred at Chama, while none fell at Clayton and Rincon.—*H. B. Hersey.*

New York.—The mean temperature was 33.3°, or 3.2° above normal; the highest was 70°, at South Canisteo on the 22d, and the lowest, 25° below zero, at North Lake on the 1st. The average precipitation was 3.02, or 0.31 above normal; the greatest monthly amount, 7.20, occurred at North Lake, and the least, 1.84, at Westfield.—*R. M. Hardinge.*

North Carolina.—The mean temperature was 51.9°, or 3.8° above normal; the highest was 85°, at Tarboro and Southern Pines on the 21st, and the lowest, 15°, at Highlands on the 28th. The average precipitation was 5.56, or 1.02 above normal; the greatest monthly amount, 11.98, occurred at Murphy; and the least, 1.23, at Wilmington.—*C. F. von Herrmann.*

North Dakota.—The mean temperature was 12.0°, or 8.3° below normal; the highest was 58°, at Dunseith on the 24th, and the lowest, 48° below zero, at McKinney on the 14th. The average precipitation was 1.28, or 0.31 above normal; the greatest monthly amount, 3.37, occurred at Berthold Agency, and the least, 0.03, at Washburn. The month was the coldest March on record.—*B. H. Bronson.*

Ohio.—The mean temperature was 41.5°, or 5.2° above normal; the highest was 82°, at Portsmouth on the 22d, and the lowest, 5°, at Colebrook on the 1st. The average precipitation was 5.17, or 2.28 above normal; the greatest monthly amount, 9.91, occurred at Camp Dennison, and the least, 2.40, at St. Ignatius College, Cleveland. Floods and heavy rains greatly damaged crops and property on lowlands.—*H. W. Richardson.*

Oklahoma.—The mean temperature was 51.2°; the highest was 90°, at Pond Creek and Prudence on the 27th, and the lowest, 10°, at Ponca City on the 14th. The average precipitation was 4.16; the greatest monthly amount, 8.83, occurred at Kemp, and the least, 0.62, at Beaver.—*J. I. Widmeyer.*

Oregon.—The mean temperature was 38.5°, or 5.0° below normal; the highest was 66°, at Dayville on the 25th, and the lowest, 7° below zero, at Fort Klamath on the 21st. The month was the coldest March since 1889. The average precipitation was 6.36, or 1.48 above normal; the greatest monthly amount, 22.77, occurred at Glenora, and the least, 0.30, at P. Ranch.—*B. S. Pague.*

Pennsylvania.—The mean temperature was 39.0°, or 4.1° above normal; the highest was 75°, at Coatesville on the 18th, and the lowest, 5° below zero, at Saegerstown on the 1st. The average precipitation was 3.22, or 0.18 below normal; the greatest monthly amount, 5.86, occurred at Somerset, and the least, 1.01, at Cannonsburg.—*T. F. Townsend.*

South Carolina.—The mean temperature was 56.4°, or 2.4° above normal; the highest was 92°, at Gillisonville on the 21st, and the lowest, 21°, at Cheraw on the 1st and at Walhalla on the 27th. The average precipitation was 4.54, or 0.08 above normal; the greatest monthly amount, 7.81, occurred at Gillisonville, and the least, 2.13, at Conway.—*J. W. Bauer.*

South Dakota.—The mean temperature was 23.0°, or about 7.0° below normal; the highest was 75°, at Oelrichs on the 27th, and the lowest, 33° below zero, at Ashcroft on the 12th. The average precipitation was was 2.17, or 1.07 above normal; the greatest monthly amount, 7.55 occurred at Aberdeen, and the least, 0.44, at Brookings.—*S. W. Glenn.*

Tennessee.—The mean temperature was 53.1°, or 6.0° above normal; the highest was 86°, at Charlotte on the 21st, and the lowest, 17°, at Erasmus and Rugby on the 28th. The average precipitation was 11.27, or 6.19 above normal; the greatest monthly amount, 18.14, occurred at St. Joseph, and the least, 6.44, at McKenzie. Unusually high water and serious damage to property, with considerable loss of human life and live stock, resulted from the great amount of rain.—*H. C. Bate.*

Texas.—The mean temperature was 4.4° above normal; there was a general excess, except over the extreme western portion and the Panhandle, where it ranged from normal to 1.6° below, with the greatest deficit at El Paso; the excess varied from 0.2° to 7.3°, with the greatest in the vicinity of Huntsville; the highest was 101°, at Fort Ringgold on the 12th and 13th and Camp Eagle Pass on the 31st, and the lowest, 8°, at Tulia on the 14th. The average precipitation was 1.40 above normal; it was not well distributed, for over the western portion and the Panhandle there was a deficiency ranging from 0.03 to 1.12, while over other portions there was a general excess, which ranged from 0.13 to 3.35 over the east-central and southwest portions and the coast district, and from 0.75 to 5.91 over eastern and northern portions, with the greatest excess at Longview; the greatest monthly amount, 10.31, occurred at Longview, and the least, trace, at Valentine. Farming operations were retarded by dry weather, which continued in all sections until the second decade of the month, and along the coast until near the close of the month, but as a whole good progress was made. Heavy rains near the close of the month did some damage to crops.—*I. M. Cline.*

Utah.—The mean temperature was 32.0°, or 8.0° below normal; the highest was 79°, at St. George on the 25th, and the lowest, 16° below zero, at Woodruff on the 2d. The average precipitation was 2.22; the greatest monthly amount, 8.00, occurred at Park City, and the least, 0.24, at Giles.—*J. H. Smith.*

Virginia.—The mean temperature was 48.2°, or 3.9° above normal; the highest was 91°, at Bon Air on the 11th, and the lowest, 11°, at Quantico on the 1st. The average precipitation was 4.04, or 0.11 below normal; the greatest monthly amount, 9.82, occurred at Big Stone Gap, and the lowest, 1.70, at Stephens City.—*E. A. Evans.*

Washington.—The mean temperature was 36.7°, or 3.7° below normal; the highest was 70°, at Elma on the 2d and at Sunnyside on the 25th. The average precipitation was 4.53, or 0.89 above normal; the greatest monthly amount, 12.32, occurred at Lapush, and the least, 0.15, at Ellensburg.—*G. N. Salisbury.*

West Virginia.—The mean temperature was 46.1°, or about 5.0° above normal; the highest was 81°, at Huntington on the 20th, and the lowest, 12°, at Beckly on the 1st. The average precipitation was 3.60, or 0.50 above normal; the greatest monthly amount, 6.52, occurred at Elkhorn, and the least, 1.33, at Burlington.—*H. L. Ball.*

Wisconsin.—The mean temperature was 26.7°, or 0.6° below normal; the highest was 71°, at Butternut on the 30th, and the lowest, 27° below zero, at Grantsburg on the 16th. The average precipitation was 2.48, or 0.87 above normal; the greatest monthly amount, 4.83, occurred at Milwaukee, and the least, 1.30, at Koepenick.—*W. M. Wilson.*

Wyoming.—The mean temperature was 26.0°, or 8.0° below normal; the highest was 74°, at Fort Laramie on the 27th, and the lowest, 29° below zero, at Sheridan on the 13th. The average precipitation was 1.72, or 0.18 above normal; the greatest monthly amount, 4.23, occurred at Laramie, and the least, 0.35, at Wise.—*M. G. Renoe.*

RIVER AND FLOOD SERVICE.

By PARK MORRILL, Forecast Official, in charge of River and Flood Service.

The month has been signalized by the development of one of the worst floods ever known in the lower Mississippi Valley; at its close the river has just begun to fall from Cairo to Memphis and is still rising from Helena southward. The flood waters came chiefly out of the lower Ohio, only a moderate flood prevailing in the upper Ohio, and the Mississippi above Cairo remaining well below the danger lines of the gauges. Heavy and continued rains in Tennessee, Kentucky, and adjoining States caused unprecedented floods in the Cumberland and Tennessee rivers, which continued from the 10th to nearly the close of the month. These waters were poured into the lower Ohio, which was already well filled by the waters from its upper reaches. At Cairo the month opened with the river 1.1 foot above danger line and there was a steady rise to a stage 10 feet higher on the 25th. At Memphis the river rose to 4.1 feet above danger line on the 19th, when the breaking of the levees checked its rise and it remained nearly stationary to the end of the month. The cessation of rise at Memphis does not indicate the passage of the flood crest, as is shown by the continued rise at Cairo. The rise at Helena continued, in spite of vast overflows, to the end of the month, when the water was 6.9 feet above danger line. At Arkansas City the rise was checked at 9.9 feet above danger line on the 29th. At Vicksburg and New Orleans the rise continued to the close of the month, at which time the stage was 8.4 feet above danger line at Vicksburg and 1.1 foot at New Orleans.

On the 15th the Weather Bureau issued a warning that "the impending flood will prove very destructive in Arkansas and northern Louisiana." Further warning was given on the 19th that "the floods in the lower Mississippi during the next ten days or two weeks will in many places equal or exceed in magnitude and destructiveness those of any previous year, and additional warning is given to the residents of the threatened districts in Arkansas, Louisiana, and western Mississippi to remove from the region of danger." These warnings were supplemented by further bulletins descriptive of the progress of the flood.

The following résumé of river stages and conditions of navigation in the respective streams is compiled from reports by the officials of the Weather Bureau at various river stations and section centers:

Hudson River. (Reported by A. F. Sims, Albany, N. Y.)—At the beginning of March an average of 15 inches of snow covered the forest section of the Hudson watershed, while over the plateau region and valley districts only scattered drifts remained. The ice in the Mohawk and other tributaries of the Hudson was from 12 to 14 inches thick. In the upper Hudson, above the State dam, the ice was from 15 to 22 inches thick, while that of the tidewater portion of the river ranged from 15 inches at Troy to 5 inches at Catskill, and open water was to be seen at points here and there from Poughkeepsie south. On the 2d of March the steamer *Norwich* opened navigation between Newburg and New York by bringing a tow into Roundout Creek. During the early days of the month copious rains melted much of the snow on the upper Hudson watershed, so that by the 9th only drifts remained. On the 6th the Mohawk River rose and the ice below the Adams Island Bridge broke up. The ice in the vicinity of Albany became loosened from the shore in many places and disappeared entirely below the Greenbush Bridge, leaving two-thirds of a mile of open water, and by forming a gorge at Downs Point caused a slight freshet. The ferryboat *Transport* resumed her regular trips between Rhinecliff and Kingston on the same day. A rapid rise in the Hudson was observed on the 8th, which continued from the early morning up to 9 a. m., when the rise was checked. By the 9th the Mohawk River began to fall, but was still 5 feet above the normal, and the Hudson was 2 feet above the normal. The ice from the upper Hudson jammed at points between Troy and Catskill.

On the 11th the Mohawk River was practically clear of ice from Fonda to its mouth; the ice which came down into the Hudson was from 12 to 16 inches thick. On this date the first boat this season made her appearance on the river at Albany. On the 12th the steamer *Evans* of the Castleton Line went down the river and met very little ice between Albany and Castleton. The People's Line steamer *Drew* arrived at her wharf in Albany from New York on the morning of the 16th, the first through boat from New York; the *City of Troy* passed up in the wake of the *Drew* to the head of tidewater navigation. By the 23d there was practically no snow over the watershed of the Hudson; the river stage was 7 feet above the normal. The cold wave of the night of the 25th checked the flow of surface water, and as a result a fall of 1 foot in the river was recorded on the morning of the 26th. At the close of the month a normal volume of water flowed in the Hudson at Albany, and the opening of navigation in 1897 will go into history as one of the most favorable that this section has ever known. It is a pleasure to state that the public confidence in our reports and forecasts was so great that merchants and others having perishable property in the low-lying portions of Albany and vicinity did not make a move to place their goods above the freshet line.

Susquehanna River and branches. (Reported by E. R. Demain, Harrisburg, Pa.)—No damaging floods occurred during the month but the stages of water in most streams of the system averaged higher than for several months, and at Harrisburg the average gauge reading was higher than during any month since April, 1896. On the West Branch of the Susquehanna the ice disappeared from Driftwood Creek at Cameron on March 2, and at Farrandsville no ice was reported after the 3d. At Sinnamahoning the water was below the zero of the gauge until the 4th, when a stage of 4 feet was reported, and on the 6th the highest stage during the month, 6 feet, occurred. At Renova the river rose 6 feet from the 2d to the 7th, reaching on the latter date the highest stage of the month, 8.5 feet. At Cedar Run, on Pine Creek, the water was below the zero of the gauge all the month, except on the 12th and 13th, and again from the 21st to the 26th, the highest stage reached being 1.7 feet of the 24th.

On the North Branch the ice broke up at Towanda on the 4th and moved out during the night on a rise of about 3 feet, and floating ice was last observed in the river at that point on the 7th. The ice along the shore at Wilkesbarre began to break up on the 1st, and the river was clear on the 3d, but floe ice was reported subsequently and the river was not entirely free from ice until the 10th. Huntingdon and Mifflin, on the Juniata, report good stages of water during the entire month, ranging from 4 to 10 feet. At Harrisburg the maximum gauge reading noted was 11.5 feet on the 26th, the highest point touched since April 4, 1896.

Watermen report the outlook for rafting on the Susquehanna as very encouraging, and it is expected that a large amount of timber will be floated to market this season. It is estimated that at least 200 more rafts will be floated this spring than last season, provided the requisite stages of water are maintained. A large number have already passed down. On the 11th and 12th sixteen rafts passed Harrisburg, containing about 90,000 cubic feet of timber. One of the largest rafts ever seen on the river arrived at Lockhaven, on the West Branch, a few days since. It was 354 feet long and contained about 80,000 feet. Forty-three rafts were reported in the dam at Lockhaven at the close of the month ready to move out on the next flood.

Rivers of South Atlantic States. (Reported by E. A. Evans, Richmond, Va.; C. F. von Herrmann, Raleigh, N. C.; L. N. Jesunofsky, Charleston,

S. C.; D. Fisher, Augusta, Ga.; and J. B. Marbury, Atlanta, Ga.)—Low water prevailed during the entire month over the watershed of the James River. On the 14th a slight rise set in but was unimportant, the maximum height reached being only 3.7 feet above the zero of the gauge at Richmond. The river then remained stationary until the 23d when it began to decline. Rains were quite frequent over the James basin, but the quantity deposited was not sufficient to produce any marked changes in the height of the stream.

The high stages in the rivers of North Carolina obtaining at the end of February were maintained throughout the first and second decades of March by the continuous but fortunately not excessive rains. There was a gradual and steady rise in the Cape Fear and in the Roanoke from the 6th to the 17th, just reaching the danger line at Weldon and Fayetteville, but beyond keeping lowlands too wet for plowing no damage resulted. An equally steady decline in all the rivers set in on the 20th and continued to the end of the month, when the stages were about the average for the season of the year.

There were two periods of freshets in the streams of South Carolina during the month. In the western section high waters occurred between the 6th and 9th and between the 11th and 18th; in the eastern section from the 1st to 11th and between the 15th and 29th. The rivers were above the danger lines on the various gauges as follows: at Camden on the 8th and 14th to 17th; at Cheraw on the 8th, 9th, and 14th to 17th; at Conway on the 2d to 11th; at Effingham on the 1st, 2d, and 21st to 23d; at Fairbluff on the 1st to 6th; and at Smiths Mills on the 2d to 6th and 16th to 28th.

The South Carolina streams were navigable throughout the entire month. More timber and plank rafts were floated down in March than during the entire logging season previously. On the Waccamaw, the Black, the Edisto, the Pedee, the Lynch, and the Little Pedee, they were reported as passing in great numbers almost daily. Freight in large quantities was also shipped, including more fertilizers than for many years past. There was little damage reported from overflow or washouts on highlands. At Cheraw on the 8th and 16th there was slight damage to the oat crop from flooding of lowlands. A few cattle were drowned in the lowlands at St. Stephens from the 22d to the 26th. The continued freshets in the lower sections during February and March have seriously interfered with work on the rice lands which can not be drained for preparation of the soil. In consequence rice planting will be delayed from fifteen to twenty-five days. Many planters are contemplating the use of turbines and steam pumps to drain their rice lands.

The Savannah River was at its best for navigation purposes from the 1st to the 7th, and from the 18th to the end of the month, while from the 8th to 17th there was too much water to permit the maintenance of regular boat schedules. The rainfall over the watershed was unusually heavy during the month, but fortunately no concentrated periods of heavy rain prevailed, except from the 12th to 14th; from the effects of the latter the river advanced close to 13 feet at Augusta. The decline afterwards was less rapid than usual, due to the almost daily addition of light rains.

The excessive rains at various periods during the month caused some serious rises and damage to property on several of the Georgia rivers. The period of heaviest rainfall was between the 5th and 15th in the northern section and between the 19th and 22d farther south. The water was above the danger line on the Oostanaula River at Resaca on the 15th and 16th; on the Ocmulgee at Macon on the 13th, 14th, and 15th; on the Chattahooche at Eufaula on the the 15th, and 23d to 26th; at Columbus on the 14th and 15th. At Eufaula the stage was 50 feet on the 24th, which is the highest since 1888, when 60 feet was reached. A rainfall of 8.27 inches occurred between 4.45 p. m. on the 21st and 12.30 a. m. on the 23d, and the river rose 30 feet in twenty-four hours.

Mobile River and branches. (Reported by F. P. Chaffee, Montgomery, Ala., and W. M. Dudley, Mobile, Ala.)—Navigable stages prevailed in the Alabama and tributaries during the entire month. Very heavy rainfalls on the 6th, amounting to 8.06 inches in twenty-four hours at Selma, 4.82 at Montgomery, and 6.94 at Wetumpka, with general but not so heavy rainfall over the northern portion of the watershed, caused sudden and rapid rise in the rivers. Heavy and general rains at intervals caused a continuance of the high waters throughout the month. It was slightly above danger line at many stations and reached 41.5 feet at Selma on the 26th. Lowlands were generally overflowed, and from the 15th to 25th steamers refused freight for any but high-water landings.

The Tombigbee River and its tributaries were falling up to and including the 5th; on the 6th general and excessive rains fell over the State, the least reported being 1.20 inch at Warrior on the Black Warrior River. These excessive rainfalls flowed off rapidly into the rivers, causing decided rises by the morning of the 6th at all points. The rise at Tuscaloosa, Ala., was 38.5 feet, and gave a stage of 54.8 feet; the river rises very rapidly at this point, owing to its narrowness and the steepness of its banks. The rains which occurred at short intervals have kept the rivers at high stages throughout the month and navigation has been an easy matter; a large shipping business has been done which is gratifying to river men, whose boats were tied up during the unusually low water of the winter just passed.

Ohio River and branches. (Reported by F. Ridgway, Pittsburg, Pa.; H. L. Ball, Parkersburg, W. Va.; S. S. Bassler, Cincinnati, Ohio; F. Burke, Louisville, Ky.; and P. H. Smyth, Cairo, Ill.)—On March 1 from 1 to 2 inches of snow remained on the ground over the greater part of the watershed of the Alleghany River and its tributaries. The mild temperatures during the first week of the month caused this snow to melt and, supplemented by the general rains which fell over western Pennsylvania at the same time, caused flood conditions in the Alleghany River on the 6th of the month. The Alleghany River reached the danger line (22 feet) about 7.30 p. m. of the 6th, at which time it was still rising at the rate of 1.5 inch per hour at Herrs Island Dam. The Monongahela River reached a maximum stage of 19.0 feet at 9.30 p. m., caused entirely by backwater from the Alleghany. Quantities of slush ice passed out of the Alleghany River during the evening. The storms of the entire month were attended by warm conditions and general rains, causing high water most of the time. Increased activity in all river interests resulted, especially among the packet operators.

General and somewhat heavy rains fell from the 4th to the 6th over the northern part of West Virginia. The rivers of that section responded quickly and a rise occurred which caused some uneasiness along the Ohio below Wheeling. The flood, however, was light and caused no damage. The crest, with a stage of 30.3 feet, passed Parkersburg on the morning of the 8th. From that time until the 19th the Ohio and its West Virginia tributaries fell slowly, but maintained good stages. Continuous rains from the 18th to the 26th again started a rise in the rivers, but it was slight.

The makeshifts employed by the railroads at Cincinnati during the prevalence of the flood of the latter part of February were abandoned at the beginning of the month and freight and passenger traffic returned to the customary depots. River business was extraordinarily active; wharves and wharf boats were crowded to their utmost capacity with freight for shipment on the fine stage of water. On the 4th unprecedented rainfalls occurred, causing a tumultuous rush of water in the small streams around Cincinnati and rapidly bringing about a local flood of a much more destructive character than that of the preceding month. All the valleys on the northern side of the Ohio were inundated; railroads suffered washouts and other damage; buildings, bridges, and other property were swept away and many towns largely submerged. At Cincinnati the Ohio suddenly responded to the extraordinary rise of the usually sluggish and unimportant streams and rose very rapidly. The river came to a stand at 43.2 feet at 8 a. m. on the 6th. On the 8th the river began rising again, with prospect of another serious freshet. The water passed the danger line (45 feet) at 10 p. m. on the 9th. Cellars of business houses in the bottoms were again flooded by backwater from the sewers, but timely warnings had been given and no serious loss was sustained. The water rose to 50.1 by 8 p. m. of the 11th, where it remained stationary until 2 p. m. of the 12th, after which it fell very slowly throughout the remainder of the month.

The month opened with a depth of 34.6 feet of water in the canal at Louisville. This was rapidly reduced until the 11th when the stage of water had fallen to the danger line, near which it remained until the 15th. After this date it fell rapidly, and on the 31st had reached an average stage. The excessive rains of the 5th and 6th swelled the smaller tributaries of the Ohio, especially those coming in from the northern side of the stream, and resulted in great damage to railroads through washouts, impeding and in some instances causing the complete suspension of traffic to all northern points for more than a week. It was not until toward the close of the month that traffic was fully resumed over all the lines entering Louisville.

At Evansville, Mount Vernon, and Cairo the river was above the danger line the entire month. At Paducah the danger line was passed on the 2d and the river continued above it to the close of the month. The maximum stage reached at Paducah was 50.9 feet on the 24th, five days after flood warnings had been issued by the Weather Bureau. At Cairo the maximum stage reached was 51.6 feet on the 26th, the highest point reached since February, 1884. All the lower portions of Paducah were submerged but no houses of any account were destroyed or materially damaged. A few shanty boats in the locality known as "Dogtown," in the vicinity of Paducah, were sunk or washed away. The farmers, being forewarned by the Weather Bureau, removed their stock and produce to places of safety.

Although no breaks have occurred in the levees protecting Cairo, seep water, augmented by rains and waste water since the closing of the sewer outlets, has increased until, at the close of the month, it is within 10 inches of the sidewalks of the graded streets. Many one-story houses in the lower portion of the city have had to be vacated. The several railroad companies centering at Cairo have been put to considerable expense protecting their properties; settling of embankments, washing of levees, and overflowing of tracks have been of frequent occurrence. Thousands of sacks of sand have been used to repair embankments, etc. The farming interests will suffer greatly, all the bottoms not protected by levees being submerged.

Tennessee and Cumberland rivers. (Reported by L. M. Pindell, Chattanooga, Tenn., and H. C. Bate, Nashville, Tenn.)—The month opened with the Tennessee falling from the headwaters to Bridgeport and rising over the lower river. General rains set in on the 2d, causing

the river to rise to 23.5 feet at Chattanooga on the 8th, when the rains became heavy and caused a further rise to 38.2 feet on the 14th; it then fell until the 19th, when heavy rains occurred again, causing the river to rise to 33.3 feet by the 22d. Never before in the history of the Tennessee River have there been four distinct rises inside of thirty days, or three rises to such high stage in any one month. During the high water special observations were obtained from all the river stations, and the information was thoroughly bulletined and given to the public. So complete was the warning that no loss, worth speaking of, occurred in Chattanooga; no one moved unnecessarily, and no one was compelled to move in water. The office force remained on duty from 7 a. m. of the 13th to 11 p. m. of the 14th, taking frequent readings of the river and posting them in the flooded districts. Between the headwaters and Bridgeport the highest water occurred between the 10th and 11th; between Florence and Paducah from the 19th to 31st. At Florence the river reached 32.5 feet at midnight on the 19th, which exceeds all previous rises. At Lower Muscle Shoals the water was over the gauge from the 20th to 24th. On the 19th the operator at Riverton Junction sent word that he could not raise Riverton as the telegraph wires were under water. Over the lower river from Florence to Paducah the flood has no equal, higher stages being reached than during any previous flood as far as known.

The tributaries were navigable during the entire month but at and below Chattanooga navigation of the Tennessee was impeded by high water from the 17th of the month, as landings could not be made safely. After the 25th navigation was resumed down the river as far as Florence. The high and back waters have flooded lowlands and retarded planting of crops. Considerable damage to small bridges and railroad trestles along the lines of small streams occurred near Knoxville. At Florence, on the morning of the 19th, the river was 31.6 feet; both the Memphis and Charleston Railroad and the Louisville and Nashville Railroad tracks were under water between the bridge and the depot. Traffic by road and rail between Florence and Sheffield was cut off by water. The rain which began on the 2d continued up to the 23d, with slight intermission.

At the beginning of March the Cumberland River was falling steadily throughout its length. General and copious rains on the 2d and 3d started a rise in the upper divisions on the 4th and lower on the 6th which continued practically without interruption until the 17th to 20th, and gave one of the longest periods of high water known in years and caused an immense loss to business interests. The danger line was passed at Carthage on the 10th and Nashville on the 14th, and the maximum of 46 feet was recorded at Carthage on the 16th and that of 49 feet at Nashville on the 20th. This is the highest water at Nashville since March 14, 1891. After the 20th the fall was steady and rapid in the upper sections but moderate in the lower river, and the month closed with the lowest water of the month but plenty for navigation.

Mississippi River and minor branches. (Reported by P. F. Lyons, St. Paul, Minn.; M. J. Wright, Jr., La Crosse, Wis.; F. J. Walz, Davenport, Iowa; F. Z. Gosewisch, Keokuk, Iowa; H. C. Frankenfield, St. Louis, Mo.; S. C. Emery, Memphis, Tenn.; R. J. Hyatt, Vicksburg, Miss.; R. E. Kerkam, New Orleans, La.; and C. Davis, Shreveport, La.)—The Mississippi River at St. Paul remained frozen until the 27th, when the ice began to weaken and move out, and by the 29th the river was practically open. River gauge readings could not be accurately made until the 20th; prior to this date, from observations of the ice field and other conditions, the average stage of water was estimated to be about 2.7 feet on the gauge. On the 20th the ice had sufficiently melted along the bank near the gauge to admit of accurate readings and so the regular record was commenced on that day with a gauge reading of 3.9 feet; a steady rise of nearly a foot a day followed to the morning of the 31st, when 13.5, or 0.5 of a foot below danger line, was registered. The prospect for a flood has commenced to excite some alarm among dwellers in the flats about the river front. The high water was evidently due to the melting of snow and ice along the watersheds of the Minnesota and that portion of the upper Mississippi extending half way from St. Paul to its source. During the early part of April it is usual to get the rest of the snow water that further adds to the flood, but most of the water so far is evidently due to the discharge from the Minnesota River.

At La Crosse the channel of the Mississippi was free from ice a considerable portion of the month, although on the 18th the average thickness of the ice was 5 inches. The ice was cut from the piers of the Mississippi wagon bridge on this date as a precautionary measure, and the river gauge readings were also resumed at the same time. On the 18th and 19th Root River reached an unusually high stage, overflowing in places and damaging some buildings, crops, and live stock, and interfering with railroad traffic. The La Crosse River reached an unusually high stage during the middle of the month. It overflowed its banks in many places, the water covering some farming lands and bottoms. The high temperature of the 17th to 19th melted a large quantity of snow and ice, and, as the ground was frozen, most of the water found its way to the rivers. The ice broke up and began running in the Mississippi at 2 p. m. of the 29th. A considerable amount of logs and driftwood was in the river during the last days of the month. The river fell on the 28th and 29th, presumably due to an ice gorge above, but from noon of the 29th to 8 a. m. of the 30th it rose 1.3 feet. The overflow of the Black, La Crosse, and Root rivers, together with the running ice, did considerable damage to bridges and seriously crippled railroad traffic. On the 29th the ice was all out of the Mississippi River in front of La Crosse.

The ice went out at Davenport on the 11th, and at Dubuque on the 19th; it held in Lake Pepin until the end of the month. Navigation was opened to Davenport on the 22d, the first steamboat of the season leaving for Burlington on that date. By the end of the month navigation was opened as far north as Lake Pepin, though considerable floating ice was running in the river from La Crosse northward until the 29th and 30th. The gorge, formed early in the winter at the mouth of the Chippewa, went out the last of the month and carried with it three or four million feet of logs, which had been carried down the Chippewa at the time the gorge formed and been brought down by high water and collected there more recently. The month closed with the river at a good stage and rising.

Ice had ceased running at Keokuk on the 6th, but on the 13th heavy gorge ice began running, presumably from Burlington and Keithsburg, where the ice gorges were broken on the 12th. On the 16th navigation was opened by the steamer *Crescent City*, resuming regular trips to Quincy, Ill. A steady rise began in the Mississippi after March 9, which was increased after the 22d by a flood coming out of the Des Moines River which swelled the Mississippi south of the Des Moines, and overflowed exposed lowlands without doing any material damage. The highest stage was reached at Keokuk on the morning of the 28th.

There was still some ice running past Hannibal as late as the 16th; the last seen at St. Louis was on the 2d. Owing to heavy rains there was a steady rise in this portion of the river during the early days of the month, amounting to 9 feet at St. Louis to a stage of 21.0 feet on the 7th. From this time to the middle of the month the river fell. The rise of the latter half of the month overflowed the bottom lands from Keokuk to Alton. On the 24th the inhabitants of the lowlands near Quincy began to move out and precautions were taken to protect the Indian Grave levees. On the 25th the bottom lands below Louisiana commenced to be flooded and the people prepared to move to higher ground. On the 27th the Mississippi water backed into the Fox River and began to overflow lowlands about Alexandria, Mo. By the 28th most of the lowlands between La Grange and Hannibal, a distance of 38 miles, were flooded, as were also the bottom lands near Burlington and some farm lands on the Missouri side opposite Alton, Ill. On this date the river at Quincy was 7 miles wide. Farmers were devoting their time to moving and saving stock and great efforts were being put forth to protect the levees. Between the 28th and 31st there was a slight fall in the water and extreme danger was averted for the time. Under the influence of the same heavy rains the Illinois River was also decidedly at flood stage after the 18th, and in a few days was 3 miles wide at Beardstown and about as wide at Virginia. It had overflowed all lowlands to its mouth and was still at a very high flood stage at the close of the month.

From St. Louis to Cairo a good stage of water was maintained during the entire month. From Cairo to Memphis flood conditions prevailed nearly the whole time. The bottoms along both banks of the river have been submerged, except where the levees were held, and even then back water from the breaks have covered a considerable portion of the country lying along the river. At certain points between Cairo and Memphis the land is high and is never overflowed under any conditions. These places are dry for a distance of about 3 miles along the river. At Tiptonville, Tenn., there is about 12 miles of dry bank, and from Fort Pillow to Fulton, Tenn., there is about 12 miles of bluff.

The month opened with the stage of water at Memphis only 5.5 feet below the danger line, and rising at the rate of about 1 foot a day. This rise, which was first felt at Memphis on February 26, continued steadily up to the 19th of March, resulting in the most extensive and destructive overflow in the history of this section. As early as the 15th, and from that time to the end of the month, a considerable portion of that section of Arkansas and Missouri bordering on the river and extending from Cairo to Helena was flooded. At Memphis the river was about 40 miles in width. From the foot of Chickasaw bluff, upon which Memphis stands, to the high ground on Crowleys Ridge, in Arkansas, there was one sheet of water. The people inhabiting the overflowed district were forced to abandon their homes, in many cases leaving their belongings behind and gladly escaping with their lives. The work of rescue was carried on as rapidly as possible, and every available steamer was pressed into the service. It is estimated that 6,000 people and 1,200 head of stock were brought to Memphis alone, and many were carried to other places. Great suffering prevailed in the sparsely settled sections, owing to the difficulty of finding and reaching the imprisoned people, many of whom were exposed to the rain and cold for a considerable time before being discovered. Fortunately the number of deaths resulting from the flood is believed to be small. The money loss can not be estimated. The people occupying the inundated districts are largely colored, and their possessions are of small value; but the aggregate loss in that direction, while not large, falls heavily on them. The destruction of railroad property, the delay of trains and total abandonment of some lines, the suspension of business, damage to plantations, and the inability to plant the season's crop will be a serious loss to this section. The steamboat

interests have also suffered from the flood, owing to the fact that but few landings could be made, and those mostly by small boats, and to the general stagnation in business which necessarily prevails throughout the entire valley. During the last ten days of the month the seat of danger was south of Memphis, in Tunica, Bolivar, and Washington counties in Mississippi, and thence southward to Vicksburg. Through three crevasses in Bolivar County there flowed an immense stream of muddy water threatening to cover the greater portion of the Yazoo Delta, and the month closed with no indication of an abatement of the flood.

The river at Memphis during the first decade in March gained 6 feet and reached the danger line at 11 a. m. on the 9th. At 31 feet the flats were entirely covered and at 31.8 feet, which was reached on the 7th, the water went over the banks on the Arkansas side. On the 12th Hopefield, Ark., which is opposite Memphis, was submerged at a gauge reading of 34.7 feet. At noon of the 13th the water reached 35.6 feet, which is the highest point previously recorded at that place. At that stage the lowlands on the Arkansas side were covered for 20 miles inland. From the 13th to the 19th the average rise was about 0.4 of a foot daily when, owing to a break in the levee near Nodena, the river came to a stand with a gauge reading of 37.1 feet at Memphis, which is 1.5 feet above the highest ever known and 4.1 feet above danger line. The water remained stationary for three days and then began to fall very slowly, the fall up to the close of the month being 0.9 of a foot. On the 19th at 3.30 p. m. the gauge at Beal street, where all previous readings had been taken, was carried away, making it necessary to use the gauge at Elevator A. This gauge, owing to an eddy, reads 0.6 feet higher than the one at Beal street and therefore in order to make the figures harmonize with those previously announced, 0.6 of a foot was deducted from the observed readings.

From Memphis to Vicksburg the Mississippi and tributary rivers have been extremely high, reaching the highest waters ever known since the Weather Bureau records began. The most disastrous overflow of record occurred the latter part of the month by crevasses in the levees of the Yazoo Delta, causing loss of stock, crops, and other property, and the suspension of railroad traffic, but fortunately no loss of life. The amount and extent of the disaster is inestimable as the country inundated is considered the garden spot of Mississippi if not of the entire cotton region. Other crevasses were reported on the Arkansas side which caused a like disaster to the counties north of the White River. Much hardship will be the result of the floods as the water will hardly subside in time to raise a crop of cotton, the principal crop in this section. The timber interests were benefited by the high water which allowed much timber to be gotten to market. Travel by boat was the only means of reaching the river stations along the Mississippi. The new canal was used for a short cut to Yazoo City from Vicksburg.

The Mississippi south of Vicksburg rose steadily from the 1st to the close of the month, passing the danger line at Vicksburg on the 16th and at New Orleans on the 27th. The condition at the end of the month is extremely critical along this stretch of river and the levees are closely watched and strengthened at every point showing any weakness. A break in the levee occurred near Point a la Hache, below New Orleans, on the night of the 21st. No great damage resulted save that some truck and rice lands were submerged and the oyster beds in that vicinity suffered. A break occurred in the Bayou Lafourche levee near Raceland on the 30th doing some local damage, but relieving the strain on the remaining levees. The levee system from Vicksburg to New Orleans held remarkably well considering the high stage between Vicksburg and the mouth of the Red River. The rise at Vicksburg ranged from a 32.8 foot stage on the 1st to 49.4 on the 31st, and at New Orleans from 10.8 on the 1st to 17.1 on the 31st.

The Red River rose from a low stage during the early days of the month to a moderately high stage at the close, the rise at Fulton continuing from the 7th to 23d, at Shreveport from the 9th to 31st, and at Alexandria from the 13th to 31st. The month opened with water insufficient for navigation on the upper river, but conditions changed quickly on account of general rains along the upper and central Red. Considerable anxiety was felt at this time, and the additional heavy precipitation near the middle of the month awakened grave apprehensions about an overflow. At the close of the month the river was rising at the rate of about one-half foot a day, but the alarm had largely subsided. The Ouachita rose markedly between the 4th and 22d at Camden, nearly reaching the danger line. The rise at Monroe was steady and rapid from the 7th to the close of the month.

Missouri River and branches. (Reported by L. A. Welsh, Omaha, Nebr., and P. Connor, Kansas City, Mo.)—From the 1st of the month to the 15th the conditions of the Missouri River from its headwaters to Yankton remained unchanged. By the 18th rains and melting snow throughout South Dakota had combined to transfer the small rivers and creeks in that State into raging torrents that poured their flood into the Missouri. On the 19th the ice in the river at Yankton was covered by 10 feet of water, but still held firm. All traffic was suspended on the three railroads entering the city. The ice began breaking on the 20th, but the general breaking up of the channel ice did not occur until the 22d. The ice in the James River, which enters the Missouri just below Yankton from the north, broke up on the 29th and began running out. The "Jim" rose rapidly, covering the bottom lands of the James River valley from bluff to bluff. The farmers in this valley were prepared for the flood and many had moved to high land. At Williston the water began running on the 29th and at the close of the month the ice was moving some along the banks, but the main body still remained firm and unbroken. At Pierre the ice went out on the night of the 29th, leaving the river clear at that point. On the 11th an ice gorge formed in Floyd River, which enters the Missouri at Sioux City; the gorge caused the water to overflow the Floyd bottoms and caused great uneasiness at Sioux City, but the gorge gave way in the late afternoon and the water ran out without doing any considerable damage.

The ice in the Missouri River at Sioux City broke up and ran out on the 29th without damage. At the close of the month much bottom land in the neighborhood of Sioux City is again covered by water. Both the Big Sioux and Missouri rivers are greatly swollen and are rising. The James River is especially troublesome above Vermilion. Many miles of railroad track are under water and the trains will not be running regularly again for many days. Channel ice began breaking at Omaha on the 15th. On the 16th the ice broke and moved out without damage or causing alarm. From the 16th to the 23d the river was full of running ice, and on the latter date the river reached the highest stage, 15 feet. After that date the river continued clear of ice and fell slowly but steadily. At the close of the month the stage of water at Omaha was 10.8 feet. A gorge, which had formed just below the mouth of the Platte River at Plattsmouth, gave way on the 10th, and the ice in the river at that point broke up and ran out without doing any damage. The river at Plattsmouth was clear of ice and falling slowly at the end of the month. An ice gorge that had formed at the railroad bridge at St. Joseph gave way during the forenoon of the 5th and moved out without causing damage. On and after the 17th the river at St. Joseph was clear of ice.

At Kansas City the Missouri was clear of ice the entire month, with the exception of the 2d to 4th and 9th to 11th, when there was some floating ice. It stood about the average stage for the season until the 18th, when it began to rise rapidly, reaching 18.2 feet on the morning of the 25th, 2.8 feet below the danger line; after that date it fell slowly to 14.9 feet at the close of the month. There was no damage in this vicinity, but considerable anxiety was felt because of threatening reports from Leavenworth and St. Joseph. The Missouri below Kansas City was practically free from ice during the entire month. During the early portion of the month, on account of heavy rains, there was a steady rise in all the rivers in that section. From the 4th to the 6th the Gasconade at Arlington rose 8.5 feet, and from the 4th to the 7th the Osage at Bagnell rose 20.9 feet. From the 9th to the 17th there was a steady fall in the Missouri.

Arkansas River. (Reported by J. J. O'Donnell, Fort Smith, Ark., and F. H. Clarke, Little Rock, Ark.)—A good navigable stage of water prevailed in the upper Arkansas River during the month, with easy access to all landings westward to Fort Gibson, of which advantage was taken by shipping from Fort Smith several thousand bags of cotton seed for planting besides other freight of a general character, but principally provisions and a large quantity of agricultural implements. Three rises occurred during the month, the second, which took place from the 17th to 20th, being more marked from the mouth of the Canadian near Webers Falls, a rise of 10 feet between that point and Fort Smith did not exceed 5 feet between Webers Falls and Fort Gibson.

The decline in the lower Arkansas River that set in on the last day of February continued interruptedly until March 5, when general rains in western Arkansas caused a rise. Continued rains over the upper watershed caused a further rise at Dardanelle and Little Rock from the 6th to the 9th. The river began falling at Fort Smith on the 9th, at Dardanelle on the 10th, and at Little Rock on the 11th, and continued to decline at all stations until the 18th, when, through moderately heavy rains in Oklahoma, Indian Territory, and Arkansas, the river began to rise quite rapidly, reaching its maximum stage of 21.4 feet at Little Rock at 1 p. m. of the 21st, being then but 1.6 feet below the danger line. It then declined steadily at all stations to the end of the month, except at Fort Smith, where a slight rise of about two feet occurred on the 31st. During the last rise of the month some fears were entertained for the safety of levees on the lower river, but ample warning of expected rise was given and the levees so strengthened that no break occurred. It is reported by the Levee Commissioners of the lower Arkansas that back water from the Mississippi River ascended the Arkansas River a distance of 95 miles by river from its mouth. Navigation was pursued uninterruptedly throughout the month and there was no overflow in the Arkansas River except at its mouth.

Rivers on the Pacific Coast. (Reported by W. H. Hammon, San Francisco, Cal.; J. A. Barwick, Sacramento, Cal.; and B. S. Pague, Portland, Oreg.)—From March 5 to 10 there was a moderate rise in the rivers of the Sacramento Valley, but no damage was done so far as known, since the high water of the preceding month had already overflowed all the tule lands. The Sacramento River at Sacramento has ranged during March between 18.6 feet and 20.7 feet. There have been no breaks in the levees and the water is receding slowly from the tule basin, and as the ground dries out sufficiently for plowing it is being put in condition for planting. There still remain hundreds of acres of tule lands under water, and will so remain until June or July.

During the month the rivers of the Columbia Basin were slightly above their normal March height, due to the excessive rainfall and,

east of the Cascade Mountains, to the melting of snow. Small streams, which in summer are almost dry, overflowed their banks. Little or no damage, however, was done. These small streams caused the Snake and Columbia to rise slightly, but not sufficiently to cause alarm. Navigation was uninterrupted during the entire month. The rivers were not frozen, nor was there any floating ice. The Willamette had a marked rise from the 23d, when in was 5.4 feet, to the 29th, when it was 11.8 feet. This rise was due to the melting of snow in the foot hills in connection with general rain.

Heights of rivers above zeros of gauges, March, 1897.

Stations.	Distance to mouth of river.	Danger-line on gauge.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Mississippi River.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
St. Paul, Minn.*	1,934	14	13.5	31	3.9	20	.....	9.6
Reeds Landing, Minn.	1,864	12	8.2	31	0.3	16	2.2	7.9
La Crosse, Wis.[b]	1,799	10	11.2	31	3.3	18	.....	7.9
North McGregor, Iowa	1,739	18	10.4	31	2.9	4-8	5.8	7.5
Dubuque, Iowa[c]	1,679	15	9.9	31	5.9	19	.....	4.0
Leclaire, Iowa[c]	1,589	10	6.5	31	0.7	7,8	3-5	5.8
Davenport, Iowa[d]	1,573	15	9.2	24	5.6	19	7.9	3.6
Keokuk, Iowa	1,443	14	13.4	28	2.4	7	7.5	11.0
Hannibal, Mo	1,382	17	14.7	29	3.5	4	8.5	11.2
Grafton, Ill	1,284	23	18.6	31	8 2	1	13.0	10.4
St. Louis, Mo.	1,241	30	23.2	28,29	12.2	2	18.7	11.0
Chester, Ill.	1,170	30	30.0	29	9.2	2	16.4	10.8
Cairo, Ill	1,073	40	51.6	26	41.1	1	48.7	10.5
Memphis, Tenn	843	33	37.1	19-21	27.4	1	34.5	9.7
Helena, Ark	767	44	50.9	31	34.8	1	44.7	16.1
Arkansas City, Ark.	635	42	51.9	29	35.0	1	44.5	16.9
Greenville, Miss	595	40	46.7	29	30.2	1	38.8	16.5
Vicksburg, Miss	474	41	49.4	31	32.8	1	41.6	16.6
New Orleans, La	108	16	17.1	31	11.2	1	13.9	5.9
Arkansas River.								
Fort Smith, Ark.	345	22	17.0	30	4.4	5	9.6	12.6
Dardanelle, Ark.	250	21	18.4	30	4.5	4	10.8	13.9
Little Rock, Ark.	170	23	21.4	21	6.6	5	13.5	14.8
White River.								
Newport, Ark	150	21	27.9	22	6.2	4	19.9	21.7
Illinois River.								
Peoria, Ill	135	14	18.3	24-27	12.6	5	15.6	5.7
Missouri River.								
Bismarck, N. Dak. †	1,201	14	.....	.....	.....	.....	.....	.....
Pierre, S. Dak. †	1,006	14	.....	.....	.....	.....	.....	.....
Sioux City, Iowa[e]	676	19	14.3	21	8.8	30	.....	5.5
Omaha, Nebr.	561	18	15.0	23	8.1	8,9	10.3	6.9
Kansas City, Mo.	380	21	18.2	25	7.5	8-10	11.1	10.7
Boonville, Mo.	191	30	15.3	26	7.6	2-4	10.3	7.7
Hermann, Mo.	95	21	12.6	6	5.3	2	9.3	7.3
Ohio River.								
Pittsburg, Pa	966	22	18.7	7	5.4	2	10.8	13.3
Davis Island Dam, Pa.	960	25	17.4	7	7.2	2	11.2	10.2
Wheeling, W. Va.	875	36	28.0	7	8.9	3	16.1	19.1
Marietta, Ohio	795	25	29.7	8	10.5	3	17.8	19.2
Parkersburg, W. Va.	785	35	30.3	8	11.0	2,3	18.3	19.3
Point Pleasant, W. Va.	703	36	33.5	9	14.5	3	24.3	19.0
Catlettsburg, Ky	651	50	43.0	11	19.5	4,5	31.0	23.5
Portsmouth, Ohio	612	50	45.6	11	22.2	5	33.7	23.4
Cincinnati, Ohio	499	45	55.6	1	30.2	31	40.3	25.4
Louisville, Ky.	367	24	34.6	1	10.8	31	19.9	23.8
Evansville, Ind	184	30	43.6	2,3	32.3	31	40.0	11.3
Mount Vernon, Ind.	148	35	45.1	16	35.2	31	42.4	9.9
Paducah, Ky.	47	40	50.9	24,25	38.0	1	46.4	12.9
Allegheny River.								
Warren, Pa	177	7	8.6	11	1.0	2	5.1	7.6
Oil City, Pa	123	13	10.4	11	2.6	2,3	5.8	7.8
Parker, Pa.	73	20	12.7	7	3.5	2	7.8	9.2
Freeport, Pa.	26	20	20.7	6	5.9	2	11.3	14.8
Conemaugh River.								
Johnstown, Pa.	64	7	8.5	6	2.2	2	3.8	6.3
Red Bank Creek.								
Brookville, Pa.	35	8	4.8	6	1.6	30,31	2.2	3.2
Beaver River.								
Ellwood Junction, Pa.	10	14	6.5	7	1.6	18	2.7	4.9
Big Sandy River.								
Louisa, Ky.	26	20	32.2	11	6.2	31	14.5	26.0
Cumberland River.								
Burnside, Ky	434	50	48.1	11	5.1	30	17.4	43.0
Carthage, Tenn.	257	30	46.1	16	7.7	30	26.0	38.4
Nashville, Tenn.	175	40	48.7	21	13.8	31	32.6	34.9
Great Kanawha River.								
Charleston, W. Va.	61	30	14.0	21	6.2	31	9.0	7.8
New River.								
Radford, Va.	153	14	5.6	11	1.1	30,31	2.1	4.5
Hinton, W. Va.	95	14	7.5	15	2.8	31	4.6	4.7
Licking River.								
Falmouth, Ky.	30	25	17.6	10	2.8	30	7.8	14.8
Miami River.								
Dayton, Ohio	69	18	16.3	6	2.0	1	4.6	14.3
Monongahela River.								
Weston, W. Va.	161	18	4.0	18	0.0	{1-3,11-17,31}	1.0	4.0

Heights of rivers above zeros of gauges—Continued.

Stations.	Distance to mouth of river.	Danger-line on gauge.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Monongahela River—Con.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
Fairmont, W. Va	119	25	5.9	25	1.6	18	3.6	4.3
Morgantown, W. Va.	95	20	12.2	20	7.9	16-18	9.3	4.3
Greensboro, Pa.	81	18	12.8	20,21	8.0	14-18	10.0	4.8
Lock No. 4, Pa.	40	28	15.3	6	8.0	18	10.8	7.3
Cheat River.								
Rowlesburg, W. Va.	36	14	6.0	6,7,19,20	2.5	18	4.2	3.5
Youghiogheny River.								
Confluence, Pa.	59	10	7.9	6	2.5	31	3.5	5.4
West Newton, Pa.	15	23	8.0	6	1.8	18	3.8	6.2
Tennessee River.								
Knoxville, Tenn.	614	29	22.5	11	2.9	31	9.7	19.6
Rockwood, Tenn	519	20	26.4	13	5.0	3,31	13.1	21.4
Chattanooga, Tenn	430	33	38.2	14	8.5	3,31	22.0	29.7
Bridgeport, Ala	390	24	27.2	16	7.0	4,31	17.6	20.2
Florence, Ala	220	16	32.5	19	8.9	6	19.4	23.6
Johnsonville, Tenn.	94	21	48.0	24	21.8	1	34.6	26.2
Wabash River.								
Terre Haute, Ind.	165	16	18.4	11	6.5	2,3	12.9	11.9
Mt. Carmel, Ill.	50	15	26.4	13	12.4	31	20.6	14.0
Red River								
Arthur City, Tex.	688	27	21.4	30	3.0	3-5	8.1	18.4
Fulton, Ark	565	28	28.6	23	2.6	3-5	15.3	26.0
Shreveport, La.	449	29	19.2	31	—0.2	5	8.6	19.4
Alexandria, La	139	33	21.3	31	2.0	13	8.9	19.3
Atchafalaya River.								
Melville, La.	100*	31	33.3	31	27.5	2	30.1	5.8
Ouachita River.								
Camden, Ark.	340	39	38.7	23	6.4	4	21.1	32.3
Monroe, La	100	40	35.7	31	12.9	7	22.9	22.8
Yazoo River.								
Yazoo City, Miss.	80	25	26.0	31	14.0	1,2	19.6	12.0
Tombigbee River.								
Columbus, Miss.	285	33	31.9	23	—0.6	3	18.0	32.5
Demopolis, Ala.	155	35	54.8	29	7.7	5	39.1	47.1
Black Warrior River.								
Cordova, Ala	155	20	32.0	7	4.0	30,31	12.9	28.0
Tuscaloosa, Ala.	90	38	54.8	8	8.6	3	34.0	46.2
Alabama River.								
Montgomery, Ala.	265	35	38.0	16	5.5	4	26.0	32.5
Selma, Ala.	212	35	41.5	26	9.5	5	31.7	32.0
Coosa River.								
Rome, Ga	225	30	23.8	15	3.1	3	12.3	20.7
Wilsonville, Ala	66	15	12.9	15	4.1	4	9.3	8.8
Tallapoosa River.								
Sturdevant, Ala.	69	15	11.0	13	1.2	3-5	5.4	9.8
Savannah River.								
Augusta, Ga	130	32	25.2	15	9.2	6	14.0	16.0
Edisto River.								
Edisto, S. C	75	6	5.7	15	4.8	12	5.3	0.9
Congaree River.								
Columbia, S. C.	37	15	12.0	15	1.4	6	4.2	10.6
Santee River.								
St. Stephens, S. C.	50	12	11.6	23	8.3	12,13	9.3	3.3
Wateree River.								
Camden, S. C	45	24	25.8	15	7.0	6	14.3	18.8
Black River.								
Kingstree, S. C.	60	12	9.9	6	8.0	31	8.9	1.9
Great Pee Dee River.								
Cheraw, S. C.	145	27	29.5	15	4.4	30	14.4	25.1
Linch Creek.								
Effingham, S. C	35	12	12.3	1,22	7.8	12	10.2	4.5
Lumber River.								
Fairbluff, N. C	10	6	6.6	1-3	5.0	31	5.9	1.6
Waccamaw River.								
Conway, S. C	40	7	7.3	7,8	4.6	31	6.4	2.7
Cape Fear River.								
Fayetteville, N. C.	100	38	37.6	16,17	7.2	30,31	17.6	30.4
James River.								
Lynchburg, Va.	257	18	5.6	15	1.8	31	3.0	3.8
Richmond, Va.	110	12	3.7	17,21	0.5	31	2.0	3.2
Potomac River.								
Harpers Ferry, W. Va.	170	16	7.6	21	3.4	3,4	5.1	4.2
Susquehanna River.								
Wilkesbarre, Pa.	178	14	13.0	26	1.0	3	6.1	12.0
Harrisburg, Pa.	70	17	11.5	26	3.2	3	7.1	8.3
W. Br. of Susquehanna.								
Lock Haven, Pa.	63	10	5.5	7	1.5	1,2	3.4	4.0
Williamsport, Pa.	35	20	11.3	25	3.1	3	7.2	8.1
Juniata River.								
Huntingdon, Pa.	80	24	6.9	6	4.0	2	5.3	2.9
Sacramento River.								
Redbluff, Cal	241	23	13.6	1	4.6	22	7.0	9.0
Sacramento, Cal.	70	28	20.7	8	18.6	25-27	19.8	2.1
Willamette River.								
Eugene, Oreg	149	10	12.4	25	4.0	7,8	5.6	8.4
Albany, Oreg	99	20	17.5	27	5.3	4	8.1	12.2
Salem, Oreg.	69	20	16.5	26	5.4	7	8.2	11.1
Portland, Oreg.	10	15	11.8	29	2.9	15	5.9	8.9

* Distance to the Gulf of Mexico. † Frozen. [a] Frozen 1-19. [b] Frozen 1-17. [c] Frozen 1-18. [d] Frozen 1-11.

NOTES BY THE EDITOR.

ICE IN KENNEBEC RIVER.

Mr. William I. Holt, of Gardiner, Me., sends the following measurements of ice and snow taken weekly on Monday at 2.30 p. m., at three points, A, B, C, about one-half mile above the bridge between Gardiner and Randolph, on the Kennebec River. The point B where the measurement was taken was nearly in the middle of the stream; the points A and C were about 50 feet distant, and respectively west and east of B, or directly across the stream. The depth of snow and the thickness of ice are given in inches.

Date.	Depth of snow.				Thickness of ice.			
	A.	B.	C.	Average.	A.	B.	C.	Average.
1896.								
December 7	.....	None.*	.....	.....	.....	None.*	.....	.....
December 14	.....	None.†	.....	.....	.....	None.†	.....	.....
December 21	.....	None.	.....	.....	7	6	7	6.6
December 28	.....	None.	.....	.....	8.5	9.7	10.8	9.6
1897.								
January 4	.....	None.	.....	.....	8.5	9.7	10.8	9.6
January 11	.....	None.	.....	.....	7	7.5	8	7.5
January 18	.....	None.	.....	.....	8	9	9	8.7
January 25	5	7	6.0	6.0	12.2	13	12.5	12.6
February 1	8.5	7	7.0	7.5	14	15	15	14.7
February 8	3	3.5	4.0	3.5	14.5	16.5	17	16.0
February 15	2.5	1.5	2.0	2.0	14	15	16	15.0
February 22	2.5	4	3.0	3.0	15.5	15	15	15.2
March 1	7	9	5.0	7.0	15	15	15	15.0
March 8	7	7	5.5	6.5	16	14	16	15.3
March 15	7	4	7.0	6.0	14	16	16	15.3
March 22	.....	Traces.	.....	.....	15	10	13	12.6
March 29	.....	Traces.‡	.....	.....	9	8	4	7.0
April 5	.....	Traces.§	.....	.....	.....	.....	.....	.....

* River has been frozen over but opened again. † Very little ice near the shore. ‡ Very soft; river open in a number of places. § Ice went out Sunday, April 4, 1897.

FIRE AT HURON, S. DAK.

About 2 a. m. March 22 fire broke out in the Alliance Block in which the Weather Bureau office at Huron, S. Dak., was located, and, in consequence of the destruction of the building, a new office was immediately secured in Jeffries' Block. The installation of instruments and the occupation of the office proceeded as fast as practicable, and everything was in complete working order by the 1st of April. The regular daily weather telegrams were, however, only interrupted for one day. The Monthly Summary for February, 1897, and the Climate and Crop Service annual report for 1896, just ready to mail, were destroyed. The manuscript work for the book of means and several minor pieces that were in daily use were not in the fire-proof vault and were therefore consumed, but the greater part of the records were safely preserved in the vault.

THE STEREOSCOPIC STUDY OF CLOUDS.

Any arrangement by which the determination of the altitude and velocity of a cloud can be done quickly by one person so as to avoid the uncertainties attending every attempt to get two distant observers to identify and simultaneously observe the same point must be considered of advantage in the study of the clouds. Several methods of accomplishing this object are suggested in the Editor's treatise on Meteorological Apparatus and Methods, including the simultaneous photography and the measurement of the resulting pictures by the "projector," devised by Professor Stokes. Evidently two such photographs can be combined together by the stereoscope into one mental picture, wherein the relations of all the parts are clearly perceived. Almost, but not quite, the inverse result is obtained if, instead of twin cameras and simultaneous photographs at neighboring locations, we take two pictures with the same camera a few seconds apart at the same location. These may be combined together in a stereoscope and the differences due to the motions of the clouds produce pseudostereoscopic phenomena as decided as those due to the difference of location of two cameras.

There have been so few actual attempts to realize these stereoscopes of clouds that we desire to call wide attention to the following note by Mr. John Tennant, published in Nature for March 25, Vol. LV, p. 486:

Since 1894 I have been making stereoscopic studies of clouds with wide separation of the camera.

Beyond the direct interest of the pictures the method has a practical value.

1. In the measure of the distance of clouds by photogrammeters, it is usual to mark by a pin prick the corresponding points of the two prints. Through the vagueness of cloud outlines it is easy to err in doing this, but any error thus made is easily detected by the stereoscope.

I have recently learned that this method has been already suggested by Mr. M. J. Amsler-Laffon, of Schaffhausen, but I do not know whether it has been previously put to a pratical test.

2. My photographs were taken by visible signal without electric connection, some of them with a base of fully 500 yards, and the clear stereoscopic definition seems to show that in ordinary cases the expensive electric connection of the cameras may be dispensed with without affecting the value of the plates for purposes of measurement.

MEXICAN CLIMATOLOGICAL DATA.

Through the kind cooperation of Señor Mariano Bárcena, Director, and Señor José Zendejas, vice-director, of the Central Meteorologico-Magnetic Observatory, the monthly summaries of Mexican data are now communicated in manuscript, in advance of their publication in the *Boletin Mensual;* an abstract translated into English measures is here given in continuation of the similar tables published in the MONTHLY WEATHER REVIEW during 1896. The altitudes occasionally differ from those heretofore published, but no reason has been assigned for these changes. The barometric means have not been reduced to standard gravity, but this correction will be given at some future date when the pressures are published on our Chart III.

Mexican data for March, 1897.

Stations.	Altitude.	Mean barometer.	Temperature.			Relative humidity.	Precipitation.	Prevailing direction.	
			Max.	Min.	Mean.			Wind.	Cloud.
	Feet.	*Inch.*	° *F.*	° *F.*	° *F.*	%	*Inch.*		
Aguascalientes	6,362	23.80	84.6	39.2	62.6	59	0.79	n., ne.	ne.
Barousse (Coahuila)	5,118	.....	83.1	43.3	64.9	.....	.....	.....	.....
Colima	.....	.....	.....	.....	78.8	.....	.....	.....	.....
Colima (Seminario)	1,600	28.27	93.7	51.1	76.3	55	T.	wsw.	sw.
Culiacan	112	29.75	95.0	57.2	74.7	59	1.52	w.	ne.
Jalapa	4,757	25.49	95.0	54.0	68.9	71	1.10	n.	.....
Leon	5,901	24.28	88.5	44.1	65.8	40	0.98	ssw.	sw., wsw.
Magdalena (Sonora)	4,948	.....	.....	.....	60.6	.....	0.71	n.	n.
Mazatlan	25	29.94	89.4	62.2	72.3	73	0.60	nw.	sw.
Merida	50	29.89	101.8	64.9	82.8	60	0.17	se.	se.
Mexico (Obs. Cent.)	7,472	23.04	84.7	47.1	65.1	40	0.01	sw.	sw.
Mexico (E. N. de S.)	.....	23.07	89.1	41.0	62.2	50	0.01	nw.	.....
Monterey	1,626	28.63	98.6	43.7	71.6	54	0.07	ne.	ne.
Morelia (Seminario)	6,401	23.95	87.8	49.3	64.4	47	T.	ssw.	w.
Oaxaca	5,164	25.04	95.0	47.8	73.2	54	0.08	s.	sw.
Parras (Coahuila)	3,986	.....	88.3	50.0	68.4	.....	.....	sw.	.....
Puebla (Col. Cat.)	7,112	23.34	85.8	44.2	66.4	49	0.00	e.	w.
Saltillo	5,399	24.80	88.0	42.6	65.8	52	0.09	sw.	n., sw.
Silao	6,063	24.25	83.5	52.5	68.5	54	0.13	wsw.	sw.
Toluca	8,612	21.85	80.8	36.0	59.4	45	0.00	wsw.	.....
Torréon (Coahuila)	3,720	.....	88.9	56.1	71.8	.....	.....	sw.	.....
Trejo (H.de, S., Gto.)*	6,011	.....	.....	.....	.....	.....	0.19	.....	.....
Zapotlan (Seminario)	5,125	25.08	87.6	48.2	68.9	46	0.09	sse.	sw.

In the above table the altitudes given in the manuscript received from Mexico differ from those previously given in the cases of Aguascalientes, Colima (Seminario), Mexico (Obs. Cent.), and Saltillo.

LONG-CONTINUED METEOROLOGICAL RECORDS.

Great interest attaches to a long-continued [illegible]orological record by any one observer. A station whose [illegible]cord runs back for twenty-five years becomes a medium of comparison for all the surrounding territory and one of fifty years establishes the normal values for that section of country. On the other hand, one must be careful not to draw too many fine

conclusions from any one such record, for in the course of fifty years barometers deteriorate and thermometers change their scale of corrections, to say nothing of the breakages and renewals that will happen to every instrument. Even the simple rain gauge is liable to be changed, and especially do its records suffer from the fact that the growth of trees and shrubbery, the erection of buildings, and possible changes of location, such as are almost sure to be made when the observer thinks he can improve the exposure—all contribute greatly to change the catch of the rain gauge. These inevitable changes increase the difficulty of ascertaining whether there has been any secular variation in climate. Such variation, if any, is certainly always very small and usually far less important than the variations due to the changes in instruments and their exposures. Although, therefore, the continuity of a record by one observer at the same station for a long period is partially broken up by these changes, still there is always a feeling that his ancient and his recent records are more nearly comparable among themselves than would be the case with records made by different observers at different locations in his neighborhood. There is, moreover, a great advantage in having long records of cloudiness, direction and force of the wind, the number of rainy days, the direction of the clouds, frequency of thunderstorms and auroras, and other miscellaneous phenomena not generally recorded by means of instruments and in reference to which the habits of the observer are, therefore, most important. The great publications on American climatology, such as "The Winds," by Coffin, "Temperature" and "Precipitation," by Schott, contain numerous records maintained by single individuals at the same station for twenty or thirty years and a few cases that are much longer than these, the most remarkable being the record by Prof. P. Cleaveland of the temperature at Brunswick, Me., from January, 1807, to December, 1859, and that of Dr. Holyoke at Salem, Mass., from January, 1786, to December, 1828. Continuous records for even longer periods have been accomplished by two or more successive observers, as in the case of a professor and his successor, or a father and his daughters, or the husband and wife. Thus, we have a record of the rainfall at New Bedford, Mass., for sixty-one years kept by S. Rodman and E. T. Tucker. It would be a valuable contribution to climatology if our voluntary observers and the directors of State weather services would acquaint themselves with the locations in their neighborhood where temperature and rainfall records have been previously kept and would stimulate or provide for the renewal of those records for a period of time long enough to establish clearly the relation between the climates at those spots and at the neighboring locations where records are now kept.

We desire also to commend to our observers the wisdom of the action recently taken by Mr. W. R. Springer, Voluntary Observer at Santa Cruz, Cal., who states that he and his son Ralph hope to make a long record for that locality, and that to that end, although his son is only 14 years old, yet he desires to be appointed local observer, and by beginning at so early an age and by having the advantage of his father's oversight expects that the future records will be homogeneous with the earlier ones. Mr. Schott's tables of precipitation publish the rainfall record kept at Santa Cruz by A. L. Taylor and J. H. Hoadley from November, 1873, to December, 1874. Mr. W. R. Springer's record extends from June, 1890, to February, 1897; Mr. Ralph Springer's record begins with March, 1897, and we hope that the people of Santa Cruz will see that it is maintained for a long time. Owing to the great irregularities in the local distribution of rainfall and the great varieties of soil on which the rain falls, it is desirable that there be several rain stations in every township. Those countries which are best supplied with rainfall stations frequently have more to the unit of area than the United States; in the Island of Barbadoes Dr. Walcott organized for the use of Governor Rawson in his studies on the sugar crop a system having more than one station to every square mile.

A MONUMENT TO BUYS-BALLOT.

At the suggestion of Dr. Maurits Snellen, Superintendent of the Royal Dutch Meteorological Institute, it is proposed to erect a monumental bust of the late Professor Buys-Ballot, as a memorial to that eminent meteorologist, who was the founder of the Royal Dutch Meteorological Institute and one of the most eminent promoters of meteorological science. The International Committee appointed to solicit and receive contributions to defray the expense of the proposed memorial monument have issued a circular, in which they say:

> As the sphere of his activity and studies extended far beyond the limits of his native country, they are convinced that their idea will not only be favorably received in Holland, but also in foreign countries, by scientific men who have known and appreciated his merits.

The Editor takes pleasure in announcing that any contributions for the Buys-Ballot monument may be sent to Prof. Willis L. Moore, Chief of the Weather Bureau, who will forward to the proper authorities.

Monuments acquire a greater value in proportion as they represent the popular voluntary expression of high appreciation, and certainty no one was more worthy to receive such a mark of esteem than Buys-Ballot, whose name is inseparably connected with the so-called Buys-Ballot law defining the relation between the wind and the pressure.

May we not hope that at some, not too distant, future, Americans will also honor those who have laid the foundations of our own progress in this science; Espy, Redfield, Maury, Loomis, Ferrel, and Joseph Henry form a brilliant galaxy whose deeds should be commemorated.

SUGGESTIONS TO OBSERVERS.

Under the above heading in the MONTHLY WEATHER REVIEW for February the voluntary observers were requested to inscribe upon their monthly reports some indication as to their rules or habits in observing and recording both thunderstorms and auroras. One observer in reply states that he "records thunderstorms every time that he hears the thunder himself or is told that some other person has heard it, and no matter whether it rains or not at his station. Also that he records auroras whenever he happens to see them before retiring, about 9.30 p. m." This is precisely the character of information that was desired. The Editor very carefully avoided imposing or suggesting any new labors. The further suggestions that were made by him were, as he stated on page 55, "for the use of those special observers who aim to make a specially complete record of thunderstorms and auroras." Nothing was added to the labors of the regular voluntary observers, but there are throughout the world many who devote special attention to these phenomena, and for the sake of uniformity the items given on page 56 were published for their information and guidance. We are pleased to learn that our suggestions have been favorably received by so many observers.

METEOROLOGICAL TABLES.

By A. J. HENRY, Chief of Division of Records and Meteorological Data.

For text descriptive of tables and charts see page 20 of REVIEW for January, 1897.

TABLE I.—*Climatological data for Weather Bureau Stations, March, 1897.*

Stations.	Elevation of instruments.			Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.										Mean wet thermometer.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.			Wind.				Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.
	Barometer above sea level, feet.	Thermometers above ground.	Anemometer above ground.	Mean actual, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.					Total.	Departure from normal.	Days with .01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.					
New England.							34.9	+ 2.0												3.32	— 0.7										
Eastport	76	69	74	29.90	30.00	+ .12	28.9	+ 0.3	46	30	35	— 4	1	22	30	26	21	74	4.03	— 0.4	21	9,731	nw.	50	se.	12	10	4	17	6.5	22.2
Portland, Me	103	81	89	29.90	30.01	+ .09	31.8	+ 1.0	52	30	40	— 1	1	24	33	28	23	74	4.55	+ 1.2	12	5,746	nw.	31	nw.	4	10	6	15	5.7	26.8
Northfield	872	15	59	29.07	30.06	+ .07	26.5	+ 1.2	49	19	36	—18	1	17	46	24	20	77	2.73	+ 0.3	14	7,673	s.	50	nw.	6	5	10	16	6.8	20.3
Boston	125	115	181	29.91	30.05	+ .10	36.9	+ 2.3	57	30	44	7	1	29	29	32	26	67	2.79	— 1.3	13	9,530	nw.	42	nw.	4	11	1	19	6.1	3.3
Nantucket	14	43	54	30.05	30.06	+ .06	38.0	+ 3.6	52	12	43	18	17	33	30	35	31	79	3.05	— 0.5	14	10,063	nw.	42	nw.	4	9	2	20	7.3	0.3
Woods Hole	.....	51	57	.....	.....	.....	36.2	+ 0.4	51	12	42	14	*	31	20	....	....	....	2.83	— 1.8	12	12,464	w.	56	s.	12	10	8	13	5.3	0.8
Vineyard Haven	.....	30	.....	.....	.....	.....	39.4	+ 3.2	55	29	47	13	1	32	22	....	....	....	3.61	— 0.8	15	.....	nw.	....	.....	....	8	12	11	....	0.1
Block Island	27	39	48	30.05	30.08	+ .12	36.6	+ 1.6	49	29	41	15	1	32	21	33	29	76	3.06	— 1.0	11	12,279	nw.	49	sw.	5	9	12	10	5.7	1.0
Narragansett Pier	.....	10	.....	.....	.....	.....	36.6	+ 3.3	57	30	44	9	1	29	26	....	....	....	2.94	— 1.7	12	.....	sw.	....	.....	....	15	2	14	....	1.5
New Haven	107	118	140	29.95	30.07	+ .08	37.7	+ 3.3	60	23	46	11	1	30	26	33	26	67	3.66	— 0.6	8	7,676	n.	39	w.	25	12	3	16	5.8	5.9
Mid. Atlan. States.							44.3	+ 3.6												2.34	— 1.0										
Albany	97	84	113	29.97	30.08	+ .09	35.3	+ 2.3	58	22	44	4	1	27	28	32	28	78	1.85	— 0.8	14	7,556	s.	36	se	5	10	5	16	6.0	2.6
Binghamton	875	79	90	.....	....	.....	34.6	.....	65	22	44	2	1	26	35	....	....	....	2.66	.....	17	6,414	w.	36	s.	14	10	5	16	6.3	4.9
New York	314	298	336	29.74	30.08	+ .08	39.2	+ 2.0	62	21	46	16	1	32	28	35	30	73	2.51	— 1.5	13	11,600	nw.	57	w.	24	10	7	14	5.8	2.2
Harrisburg	377	94	102	29.69	30.11	+ .04	41.1	+ 4.9	66	*	48	22	1	34	25	36	28	65	2.87	— 0.6	13	6,476	w.	40	w.	24	9	7	15	6.3	4.8
Philadelphia	117	168	184	29.97	30.10	+ .08	43.1	+ 4.1	68	22	51	23	1	35	26	38	33	70	2.03	— 1.2	13	8,074	nw.	34	nw.	13	8	11	12	5.9	T.
Atlantic City	53	68	76	30.04	30.09	+ .09	41.0	+ 3.2	63	10	47	23	17	35	24	38	35	81	2.20	— 1.7	10	9,263	sw.	41	w.	24	8	12	11	5.9	T.
Baltimore	123	68	82	29.96	30.09	+ .06	45.0	+ 2.9	72	21	53	28	17	37	30	39	32	65	2.40	— 1.7	12	4,338	w.	25	w.	24	9	10	12	5.7	T.
Washington	112	59	76	29.99	30.11	+ .07	46.0	+ 4.6	82	22	56	26	*	36	38	41	36	73	2.66	— 1.5	13	6,030	s.	36	nw.	10	11	9	11	5.1	T.
Cape Henry	.....	5	34	.....	.....	.....	50.5	+ 5.4	80	*	59	33	1	42	31	....	....	....	4.01	— 1.1	12	.....	se.	....	.....	....	10	10	11	....	....
Lynchburg	665	83	88	29.38	30.13	+ .08	50.0	+ 4.2	79	21	60	30	29	41	32	44	38	71	3.46	— 0.2	14	3,933	sw.	25	nw.	10	6	12	13	6.3	T.
Norfolk	57	88	93	30.07	30.14	+ .10	51.4	+ 4.4	80	22	60	32	1	42	32	46	42	78	4.38	— 0.2	14	6,995	ne.	36	sw.	24	11	5	15	5.9	....
S. Atlantic States.							57.3	+ 3.5												3.90	— 0.7										
Charlotte	773	67	76	29.28	30.11	+ .06	52.2	+ 1.4	80	21	60	28	28	44	30	47	42	75	6.21	+ 1.5	19	5,926	sw.	34	s.	6	8	7	16	6.6	....
Hatteras	11	17	36	30.12	30.13	+ .09	52.9	+ 3.2	69	6	58	36	1	47	34	50	48	83	3.79	— 2.3	18	11,160	ne.	43	n.	7	6	12	13	6.4	....
Kittyhawk	9	12	30	30.09	30.10	+ .07	50.8	+ 3.2	78	20	61	30	1	41	35	49	46	81	4.42	— 0.7	12	11,844	ne.	40	ne.	7	12	8	11	5.0	....
Raleigh	375	93	101	29.73	30.14	+ .07	53.0	+ 4.7	80	21	62	31	1	44	34	47	41	71	4.82	— 0.1	13	5,382	sw.	26	sw.	24	5	12	14	6.4	T.
Wilmington	78	82	88	30.05	30.14	+ .09	56.8	+ 3.1	82	21	65	34	28	48	28	52	48	87	1.23	— 2.7	13	7,073	w.	34	w.	24	11	9	11	5.3	....
Charleston	48	60	72	30.11	30.16	+ .09	60.8	+ 4.1	86	21	68	41	28	54	22	56	52	79	4.38	+ 0.4	15	8,600	sw.	38	ne.	13	6	14	11	6.4	....
Columbia	.....	5	.....	.....	.....	.....	55.8	+ 1.6	85	21	66	30	28	46	34	....	....	....	3.66	— 0.9	12	.....	ne.	....	.....	....	7	5	19	....	....
Augusta	180	89	103	29.92	30.11	+ .05	59.2	+ 3.1	87	21	68	35	28	50	29	53	49	76	4.72	— 0.5	13	5,162	ne.	31	w.	25	5	7	19	7.3	....
Savannah	98	63	86	30.02	30.14	+ .04	62.8	+ 4.0	86	20	71	40	28	54	27	57	54	80	4.16	+ 0.4	10	6,812	ne.	30	w.	27	10	3	18	6.4	....
Jacksonville	43	69	84	30.07	30.12	+ .03	68.8	+ 6.8	88	20	78	48	1	60	38	62	59	83	1.60	— 1.8	7	6,950	ne.	32	sw.	19	11	14	6	4.8	....
Florida Peninsula.							73.9	+ 4.4												1.82	— 0.3										
Jupiter	28	13	30	30.10	30.13	+ .03	73.2	+ 3.2	88	23	79	49	27	68	26	67	64	77	3.65	+ 1.4	8	8,376	s.	29	s.	19	14	14	3	4.3	....
Key West	22	42	50	30.09	*30.11	+ .01	76.5	+ 4.0	84	20	81	65	28	72	13	69	66	74	0.38	— 0.8	2	8,056	se.	37	n.	24	22	8	1	3.0	....
Tampa	36	60	68	30.09	30.13	+ .03	71.9	+ 6.1	88	16	80	50	1	64	27	66	63	81	1.44	— 1.6	9	5,831	se.	28	sw.	19	11	16	4	4.1	....
East Gulf States.							64.3	+ 5.6												6.12	+ 0.3										
Atlanta	1,131	92	126	28.90	30.11	+ .01	54.9	+ 3.4	80	21	63	32	26	47	28	50	47	80	5.74	— 0.3	17	8,425	e.	52	n.	14	5	4	22	7.8	....
Pensacola	56	78	90	30.01	30.07	— .03	66.3	+ 5.8	77	13	71	43	1	61	21	63	61	86	5.31	— 0.2	14	8,852	se.	42	se.	30	5	11	15	6.8	....
Mobile	57	88	96	30.00	30.06	— .03	66.2	+ 6.7	79	20	72	41	1	60	25	62	59	84	7.43	— 0.1	12	6,960	s.	45	se.	29	6	3	22	7.7	....
Montgomery	221	100	107	29.83	30.06	— .03	63.0	+ 5.5	84	20	71	37	1	55	28	58	55	81	12.02	+ 5.6	13	6,209	se.	34	w.	19	5	14	12	6.1	....
Vicksburg	254	65	73	29.70	29.97	— .11	64.2	+ 5.7	86	30	73	42	15	56	26	58	53	71	5.12	— 1.3	15	7,188	se.	56	nw.	19	11	14	6	4.6	....
New Orleans	54	112	120	29.97	30.03	— .04	69.4	+ 6.9	84	20	76	50	25	62	23	64	61	81	4.82	— 0.5	11	7,881	se.	36	ne.	29	5	4	22	7.4	....
Port Eads	.....	27	.....	.....	.....	.....	66.4	+ 4.6	78	*	73	50	*	59	20	....	....	....	2.43	— 1.3	5	.....	se.	....	.....	....	4	15	12	....	....
West Gulf States.							63.0	+ 4.2												5.59	+ 2.2										
Shreveport	249	77	84	29.68	29.95	— .11	62.8	+ 4.3	86	20	72	38	24	54	33	57	53	76	6.95	+ 2.3	16	6,830	se.	35	se.	28	7	6	18	6.8	....
Fort Smith	481	63	72	29.42	29.94	— .10	54.6	+ 3.0	81	30	64	27	14	45	38	48	43	71	5.72	+ 2.5	16	7,130	e.	48	s.	5	14	3	14	5.2	....
Little Rock	302	71	79	29.07	29.99	— .09	56.6	+ 3.0	83	30	65	33	14	48	35	50	45	71	10.43	+ 5.2	18	6,907	s.	30	sw.	9	10	5	16	5.9	....
Corpus Christi	20	42	50	29.90	29.92	— .13	69.2	+ 5.2	92	21	75	47	25	63	34	65	64	89	1.61	— 0.1	6	10,154	se.	36	se.	28	6	9	16	6.5	....
Galveston	42	85	96	29.93	29.97	— .08	66.5	+ 4.0	79	19	71	51	23	62	19	64	62	89	4.59	+ 1.6	16	8,825	s.	48	s.	28	8	6	17	6.5	....
Palestine	510	54	61	29.40	29.95	— .12	64.0	+ 4.8	85	20	73	38	24	55	29	57	52	73	8.19	+ 4.2	5	6,698	s.	32	sw.	28	8	6	17	6.7	....
San Antonio	704	95	104	29.18	29.92	— .13	67.6	+ 5.4	92	30	78	38	24	57	37	59	53	69	1.65	— 0.4	8	7,368	se.	42	nw.	28	9	9	13	5.7	....
Ohio Val. & Tenn.							48.8	+ 3.0												7.50	+ 3.2										
Chattanooga	762	106	112	29.28	30.10	+ .02	53.9	+ 2.9	80	20	62	32	28	46	28	48	43	73	11.22	+ 5.2	19	6,984	s.	40	s.	13	4	12	15	7.0	....
Knoxville	980	80	88	29.04	30.09	.00	53.1	+ 4.8	82	21	62	28	28	44	30	48	43	75	9.59	+ 4.2	16	5,109	w.	36	w.	5	5	6	20	7.4	T.
Memphis	399	140	154	29.58	30.02	— .05	55.4	+ 2.9	80	31	64	34	15	47	33	50	46	74	10.04	+ 4.2	20	9,896	se.	41	w.	5	11	6	14	5.6	....
Nashville	545	128	134	29.46	30.05	— .01	53.6	+ 4.6	82	20	63	32	27	44	35	47	41	69	8.49	+ 3.3	18	7,526	s.	39	sw.	22	7	9	15	6.2	0.1
Lexington	989	75	122	28.98	30.05	.00	47.6	+ 3.2	76	22	56	22	27	39	32	42	36	69	6.55	+ 1.8	18	11,496	sw.	50	sw.	5	3	13	15	7.3	T.
Louisville	525	114	136	29.47	30.06	— .01	48.8	+ 2.9	77	21	58	27	27	40	33	43	37	69	7.95	+ 3.9	16	8,047	s.	38	sw.	24	8	5	18	6.8	T.
Indianapolis	823	154	164	29.15	30.05	+ .01	42.9	+ 3.0	65	22	51	24	15	34	28	39	34	73	5.85	+ 2.3	17	9,648	nw.	45	w.	14	7	10	14	6.4	1.4
Cincinnati	628	152	157	29.38	30.07	+ .01	46.4	+ 3.6	73	22	55	25	27	38	30	41	35	67	9.89	+ 6.6	15	7,317	e.	36	w.	24	7	11	13	6.5	0.1
Columbus	834	87	100	29.16	30.06	+ .02	43.1	+ 4.3	73	22	52	24	15	34	30	40	35	77	5.45	+ 2.5	13	7,188	w.	34	w.	14	6	10	15	7.0	1.2
Pittsburg	842	116	126	29.16	30.08	+ .04	44.6	+ 5.3	70	22	54	24	7	35	31	40	36	75	3.50	+ 0.8	18	5,778	w.	43	s.	14	6	11	14	6.6	2.2
Parkersburg	638	77	84	29.38	30.09	.00	47.1	+ 5.8	74	5	57	28	16	37	35	42	38	77	3.99	+ 0.7	17	5,598	n.	38	w.	20	7	8	16	6.8	1.1
Lower Lake Region.							35.7	+ 3.4												3.19	+ 0.6										
Buffalo	768	178	206	29.19	30.06	+ .06	34.4	+ 4.6	57	30	42	4	1	27	36	31	26	73	3.54	+ 1.0	14	13,409	w.	76	w.	12	9	12	10	6.1	4.1
Oswego	335	76	87	29.66	30.05	+ .05	32.8	+ 3.1	56	30	40	0	1	26	36	30	26	79	4.19	+ 1.6	18	10,595	se.	44	sw.	14	8	6	17	6.6	7.6
Rochester	523	81	90	29.46	30.05	+ .05	35.1	+ 4.9	63	30	43	3	1	27	36	31	26	73	3.14	+ 0.3	20	7,594	sw.	47	sw.	12	8	11	11	5.8	8.1
Erie	714	92	102	29.26	30.05	+ .04	36.4	+ 3.4	60	30	44	7	1	29	35	33	29	79	2.79	— 0.0	17	10,571	w.	54	s.	14	6	8	17	6.6	1.5
Cleveland	762	190	201	29.20	30.04	.00	38.0	+ 4.7	62	19	46	18	7	30	27	34	30	75	2.47	— 0.3	18	12,512	ne.	56	w.	14	10	8	13	5.8	2.6
Sandusky	629	62	74	29.35	30.05	+ .01	37.6	+ 3.3	64	18	45	20	1	31	29	34	30	75	2.41	— 0.1	16	8,804	e.	44	nw.	21	6	8	17	6.8	2.5
Toledo	674	122	127	29.30	30.05	+ .03	36.9	+ 2.1	64	18	45	17	27	29	28	33	30	80	3.25	+ 1.2	18	8,029	e.	36	w.	12	8	7	16	6.4	5.5
Detroit	730	160	166	29.24	30.06	+ .04	34.6	+ 0.7	57	18	42	14	7	27	27	32	28	80	3.70	+ 1.4	16	8,319	ne.	48	sw.	12	10	8	13	6.1	10.4
Upper Lake Region.							32.0	+ 1.1												3.04	+ 1.0										
Alpena	609	61	65	29.38	30.07	+ .05	27.2	+ 3.6	52	18	34	— 3	16	21	29	25	22	81	2.11	+ 0.2	12	7,862	nw.	36	ne.	12	9	11	11	5.9	16.3
Grand Haven	628	55	64	29.33	30.04	+ .02	32.3	+ 1.1	65	30	40	5	16	25	28	29	26	84	3.21	+ 0.9	16	8,561	e.	39	sw.	12	6	7	18	7.0	10.3
Marquette	734	67	95	29.22	30.06	+ .02	24.3	+ 1.9	49	29	31	— 2	15	17	31	22	20	84	4.29	+ 2.4	13	7,016	nw.	38	s.	17	3	9	19	7.4	39.8
Port Huron	639	70	108	29.35	30.07	+ .05	31.8	+ 2.9	55	21	38	8	1	25	28	30	27	82	3.42	+ 0.8	18	9,244	nw.	52	sw.	12	8	9	14	5.8	5.5
Sault Ste. Marie	694	58	65	29.36	30.07	+ .03	21.7	— 0.3	55	30	30	—14	16	13	28	20	16	82	2.10	+ 0.9	12	7,306	nw.	36	nw.	14	8	8	15	6.5	17.8
Chicago	824	241	274	29.13	30.05	+ .01	34.7	+ 0.4	58	29	41	17	14	28	23	32	29	83	3.56	+ 1.1	16	14,416	se.	49	e.	31	12	7	12	5.4	11.2
Milwaukee	671	106	149	29.30	30.06	+ .03	31.2	+ 1.0	55	30	37	9	4	26	26	29	26	83	4.83	+ 2.4	15	8,569	w.	35	sw.	12	6	5	20	7.3	14.4
Greenbay	617	49	57	29.39	30.09	+ .04	26.7	+ 1.2	55	31	35	— 4	16	19	34	23	19	76	2.52	+ 0.4	13	6,125	n.	32	nw.	12	11	11	9	5.4	11.1
Duluth	702	95	106	29.28	30.09	+ .04	21.8	— 2.1	42	21	29	—11	15	15	30	20	16	80	1.34	— 0.3	13	7,703	ne.	40	ne.	19	11	10	10	5.1	13.9
North Dakota.							11.6	—11.6												1.45	+ 0.6										
Moorhead	935	54	60	29.02	30.12	+ .02	15.2	— 5.3	54	31	24	—32	15	6	40	14	12	90	1.34	+ 0.5	13	8,558	nw.	36	se.	4	12	5	14	5.3	7.3
Bismarck	1,674	16	29	28.21	30.13	+ .03	11.8	—12.4	48	29	21	—36	15	2	39	10	5	72	0.91	— 0.2	9	6,610	nw.	35	n.	5	18	6	7	4.6	7.6
Williston	1,875	15	31	27.97	30.13	+ .05	7.8	—17.1	47	29	18	—35	14	— 2	53	7	4	83	2.10	+ 1.6	9	5,757	n.	36	n.	30	16	9	6	4.2	15.2
Upper Miss. Valley.							35.5	— 0.5												4.02	+ 1.8										
Minneapolis	.....	99	.....	.....	.....	.....	24.7	— 4.8	61	30	32	—10	14	17	34	....	....	....	3.05	+ 1.5	12	.....	nw.	....	.....	....	8	10	13	....	16.0
St. Paul	837	114	124	29.12	30.08	+ .02	24.2	— 4.3	60	30	32	— 9	14	17	42	22	18	79	2.95	+ 1.5	12	6,034	nw.	30	ne.	31	8	7	16	6.3	15.1
La Crosse	.....	70	78	.....	.....	.....	27.2	— 3.5	65	29	36	0	*	18	40	....	....	....	1.61	0.0	15	5,495	n.	30	ne.	31	9	8	14	6.1	6.7
Davenport	599	71	79	29.34	30.01	— .05	35.2	+ 0.3	64	19	43	6	14	28	26	32	28	79	2.82	+ 0.7	11	7,308	e.	38	ne.	31	6	4	21	7.0	10.1
Des Moines	867	84	88	29.08	30.05	— .01	34.8	— 0.2	60	17	43	— 2	14	26	28	31	27	74	2.13	+ 0.7	11	7,455	se.	36	e.	31	10	4	17	6.3	6.1
Dubuque	698	49	56	29.26	30.05	+ .01	32.5	— 0.7	60	29	40	7	14	26	27	29	25	78	2.97	+ 0.7	14	6,040	nw.	30	e.	31	11	5	15	5.8	5.1
Keokuk	614	64	78	29.33	30.01	— .03	38.6	+ 0.7	71	19	46	6	14	31	29	35	32	79	4.16	+ 2.0	14	6,671	nw.	37	nw.	12	7	10	14	6.3	3.8
Cairo	350	87	93	29.61	30.01	— .03	50.6	— 3.5	76	21	58	31	14	43	28	45	41	73	7.50	+ 3.7	18	9,082	s.	56	s.	5	3	12	16	6.9	T.

TABLE I.—*Climatological data for Weather Bureau Stations, March, 1897*—Continued.

Stations.	Elevation of instruments: Barometer above sea level, feet.	Thermometers above ground.	Anemometers above ground.	Pressure, in inches: Mean actual, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Temperature of the air, in degrees Fahrenheit: Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches: Total.	Departure from normal.	Days with .01, or more.	Wind: Total movement, miles.	Prevailing direction.	Maximum velocity: Miles per hour.	Direction.	Date.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.
Up. Miss. Val.—Con																															
Springfield, Ill.	644	82	92	29.31	30.02	− .04	41.0	+ 1.1	74	19	48	16	14	34	29	37	32	74	4.47	+ 1.8	17	8,340	se.	36	e.	31	6	5	20	7.5	0.4
Hannibal	534	75	107	.....	.....	.....	41.7	.....	74	19	50	11	14	33	29	.....	.....	.....	4.30	+ 2.1	14	7,854	nw.	34	e.	31	9	7	15	6.3	0.3
St. Louis	567	111	210	29.40	30.03	− .03	46.6	+ 2.8	76	19	55	30	14	39	30	42	38	77	8.25	+ 4.8	15	8,458	e.	38	w.	14	8	6	17	6.8	T.
Missouri Valley.							34.7	− 1.8											2.70	− 0.9											
Columbia	.....	4	84	.....	.....	.....	44.8	+ 3.7	72	30	55	10	14	34	33	.....	.....	.....	5.33	+ 2.4	17	8,603	se.	35	e.	31	7	6	18	7.1	0.4
Kansas City	963	78	95	28.94	30.00	− .07	42.2	− 0.1	76	*	52	6	14	33	33	37	34	75	2.37	+ 0.2	10	6,937	se.	27	nw.	12	8	12	11	5.7	1.2
Springfield, Mo.	1,324	100	103	28.53	29.96	− .09	47.0	+ 2.0	76	21	56	14	14	38	29	42	37	75	5.91	+ 2.6	14	10,209	se.	40	se.	29	8	12	11	5.8	T.
Topeka	.....	81	.....	.....	.....	.....	43.4	+ 1.4	78	30	54	4	14	33	35	.....	.....	.....	2.32	+ 0.2	11	.....	s.	.....	.....	...	8	15	8	.....	2.3
Lincoln	1,199	74	84	28.68	29.99	.....	35.6	− 2.3	69	28	45	− 5	14	26	40	32	29	81	1.48	+ 0.2	10	9,509	se.	44	se.	31	6	14	11	6.0	2.8
Omaha	1,103	92	97	28.79	30.02	− .07	34.6	− 1.9	66	17	44	− 3	14	26	32	32	30	83	1.47	0.0	12	7,100	se.	38	e.	18	5	12	14	6.8	1.8
Sioux City	1,139	96	100	.....	.....	.....	28.8	− 2.0	60	30	39	− 6	14	19	43	.....	.....	.....	1.71	+ 0.4	9	10,649	nw.	48	e.	31	8	6	17	6.6	1.8
Pierre	1,460	50	61	28.40	30.05	− .04	23.6	− 6.7	64	28	31	−15	14	16	37	21	18	85	2.49	+ 1.6	9	7,696	se.	47	e.	31	7	13	11	5.8	10.7
Huron	1,310	63	72	28.60	30.08	− .02	19.5[d]	− 9.5	52[d]	29	29[d]	−25°	14	10°	40[d]	17[d]	13[d]	81[d]	1.53	+ 0.6	11	8,472[e]	se.	48	se.	16	4	13	14	6.6	4.0
Yankton	1,234	51	57	28.66	30.04	− .05	27.8	− 2.8	58	29	36	− 8	14	19	39	.....	.....	.....	2.37	+ 1.2	9	7,676	nw.	36	nw.	11	11	6	14	6.0	3.7
Northern Slope.							24.1	− 9.0											1.60	+ 0.8											
Havre	2,494	15	33	27.26	30.07	+ .02	10.9	−19.0	46	28	22	−41	13	0	57	10	7	87	0.43	− 0.1	7	6,602	ne.	38	sw.	2	9	14	8	5.1	3.9
Miles City	2,372	41	49	27.43	30.09	+ .01	15.4	−16.0	53	29	25	−26	13	6	39	14	10	80	3.50	+ 3.0	15	4,528	ne.	30	n.	30	9	12	10	5.6	23.8
Helena	4,108	88	93	25.69	30.09	+ .03	21.4	−12.6	56	25	29	−14	13	14	24	18	12	67	1.23	+ 0.6	8	4,386	w.	35	w.	29	8	11	12	5.7	12.1
Rapid City	3,251	53	61	26.48	30.00	− .10	27.4	− 4.3	71	28	39	−13	13	16	44	23	19	79	1.69	+ 0.6	10	5,701	nw.	36	nw.	31	5	10	16	6.7	10.1
Cheyenne	6,105	58	60	23.79	30.04	− .04	29.1	− 5.9	62	26	40	0	13	19	34	24	12	55	2.32	+ 1.6	8	9,412	nw.	48	nw.	31	11	14	6	5.1	22.8
Lander	5,372	26	36	24.44	29.99	− .09	28.6	− 3.9	61	26	41	− 8	13	16	41	23	12	55	1.38	0.0	6	4,395	sw.	28	w.	5	6	18	7	5.9	13.8
North Platte	2,826	43	52	26.97	30.01	− .08	35.6	− 1.4	68	30	47	5	14	24	38	30	26	74	0.66	− 0.1	9	7,829	se.	40	nw.	11	11	9	11	5.8	3.0
Middle Slope.							42.5	− 0.8											1.83	+ 0.3											
Denver	5,290	83	151	24.52	29.98	− .08	35.7	− 4.4	69	28	47	5	23	24	40	28	17	53	0.90	− 0.1	9	6,546	s.	38	nw.	31	8	12	11	5.7	12.1
Pueblo	4,713	74	81	25.07	29.90	− .09	39.6	− 2.4	72	27	54	10	14	25	43	30	12	44	0.32	− 0.2	5	7,086	n.	54	nw.	31	11	14	6	4.7	2.6
Concordia	1,398	42	47	28.44	29.97	− .14	41.0	+ 1.5	79	18	52	4	14	30	41	34	28	69	1.44	− 0.3	9	6,727	n.	28	ne.	21	13	7	11	5.1	3.5
Dodge City	2,504	44	52	27.27	29.94	− .09	42.6	− 0.6	81	26	56	11	14	30	47	35	28	68	0.26	− 0.7	10	9,682	se.	51	sw.	30	17	8	6	4.2	1.3
Wichita	1,351	78	85	28.48	29.95	− .08	45.7	+ 1.2	82	26	57	11	14	34	43	39	33	71	3.34	+ 1.4	12	7,928	n.	32	sw.	30	15	9	7	4.7	0.2
Oklahoma	1,218	54	53	28.62	29.94	− .11	50.4	− 0.1	84	27	61	18	14	34	40	35	45	41	77	4.71	+ 1.6	12	7,433	sw.	32	s.	30	14	7	10	5.0	
Southern Slope.							51.4	+ 0.3											2.24	+ 1.4											
Abilene	1,749	47	54	28.10	29.94	− .11	57.6	+ 1.6	82	26	69	26	14	46	34	46	40	63	4.02	+ 2.8	11	7,527	se.	45	w.	28	14	8	9	4.7	
Amarillo	3,691	53	61	26.11	29.94	− .10	45.2	− 0.1	80	27	58	13	14	32	42	36	24	55	0.47	0.0	7	13,746	s.	64	sw.	30	10	15	6	4.7	T.
Southern Plateau.							51.2	− 4.4											0.78	+ 0.2											
El Paso	3,767	10	110	26.08	29.92	− .07	55.2	− 1.1	79	26	70	24	23	40	43	39	9	23	0.05	− 0.4	1	11,848	nw.	60	sw.	4	16	11	4	3.2	
Santa Fe	6,998	47	50	23.10	29.95	− .07	36.7	− 3.3	61	28	47	5	23	26	30	29	13	45	2.06	+ 1.4	8	6,407	sw.	35	sw.	29	19	7	5	3.7	10.0
Phœnix	1,076	47	57	28.78	29.93	.....	54.3	− 6.7	84	26	67	31	23	41	38	44	31	47	0.53	− 0.2	5	3,630	e.	26	nw.	29	20	8	3	2.3	
Yuma	139	16	50	29.80	29.95	− .04	58.4	− 6.7	86	25	70	39	30	46	38	46	31	41	0.48	− 0.2	3	6,639	nw.	41	w.	29	24	7	1	1.7	
Middle Plateau.							33.1	− 3.5											1.73	+ 0.3											
Carson City	4,730	47	....	25.14	30.03	.....	33.9	− 8.3	65	24	44	10	8	24	34	29	21	61	2.78	+ 1.4	10	6,691	sw.	54	sw.	18	13	10	8	5.9	24.7
Winnemucca	4,340	59	70	25.55	30.04	− .02	31.8	− 8.9	61	25	40	12	22	24	25	28	20	60	0.32	− 0.6	10	9,005	sw.	66	sw.	28	5	8	18	7.1	12.9
Salt Lake City	4,344	83	90	25.53	30.06	− .04	33.6	− 8.4	62	25	41	10	13	26	25	31	26	72	2.20	+ 0.2	11	5,490	se.	38	w.	28	3	9	19	8.0	
Northern Plateau.							31.0	− 6.6											2.70	+ 1.0											
Baker City	3,470	49	47	26.29	30.01	− .05	28.8	− 6.1	54	25	36	0	13	21	37	25	19	67	2.08	+ 0.3	21	4,753	s.	26	s.	25	3	10	18	7.6	13.4
Idaho Falls	4,742	10	56	25.10	30.10	+ .02	22.8	− 7.2	48	25	32	−16	13	14	38	21	19	82	3.84	+ 2.1	21	8,955	s.	43	s.	10	9	7	15	6.0	34.1
Spokane	1,943	99	107	27.80	29.93	− .09	32.8	− 6.9	56	24	40	3	13	26	30	30	24	72	2.50	+ 1.1	18	5,181	s.	36	sw.	25	8	6	17	6.6	16.4
Walla Walla	1,018	65	73	28.83	29.95	− .10	39.6	− 6.3	65	25	47	16	12	32	25	37	33	79	2.38	+ 0.6	13	6,130	s.	31	sw.	25	7	16	8	5.8	5.0
N. Pac. Coast Reg.							40.2	− 5.6											7.65	+ 1.7											
Fort Canby	179	10	34	29.68	29.88	− .15	40.9	− 4.5	51	1	45	26	12	36	14	40	38	88	9.15	+ 2.7	26	12,424	w.	95	s.	25	2	10	19	7.5	3.0
Port Angeles	29	47	61	.....	.....	.....	38.2	− 3.5	55	27	44	19	12	32	19	...	.....	.....	2.40	+ 0.2	19	4,660	w.	30	sw.	28	3	19	9	6.5	4.5
Pysht	.....	5	.....	.....	.....	.....	38.2	.....	53	24	45	26	30	32	30	...	.....	.....	7.86	+ 0.4	26	.....	e.	...	.....	...	...	8	2	21	....	8.0
Seattle	119	100	108	29.77	29.90	.....	40.2	.....	55	25	46	30	12	35	21	37	32	75	3.05	.....	19	5,786	se.	40	s.	25	6	14	11	6.4	4.4
Tatoosh Island	86	12	21	29.77	29.87	− .15	39.0	− 5.1	50	1	43	25	12	35	11	37	32	74	11.31	+ 2.2	25	11,912	e.	60	nw.	10	4	9	18	7.1	8.5
Astoria	.....	39	60	.....	.....	.....	41.6	− 5.0	56	25	47	24	12	36	19	.....	.....	.....	11.88	+ 4.8	24	.....	w.	.....	.....	...	...	3	8	20	....	3.8
Portland, Oreg	153	203	213	29.77	29.94	− .10	40.5	− 8.0	56	25	46	23	12	35	21	38	34	78	4.00	− 1.5	24	8,356	s.	55	s.	25	1	16	14	6.9	5.0
Roseburg	521	56	67	29.41	29.99	− .08	41.0	− 7.7	58	23	47	28	30	35	21	38	35	81	6.92	+ 3.4	26	3,580	sw.	30	sw.	25	2	8	21	8.1	3.5
Mid. Pac. C'st Reg.							47.6	− 5.3											4.96	+ 0.9											
Eureka	64	60	69	30.02	30.08	+ .01	45.2	− 3.5	62	23	52	30	21	38	23	42	39	81	9.85	+ 3.4	26	6,276	nw.	45	w.	28	4	17	10	6.4	0.5
Redbluff	334	54	58	29.67	30.03	− .01	47.9	− 7.2	67	24	56	32	29	40	27	41	33	61	1.99	− 1.3	13	6,669	se.	36	se.	27	10	9	12	5.7	
Sacramento	71	106	117	.....	.....	.....	49.4	− 6.4	70	24	57	36	29	42	25	.....	.....	.....	2.54	− 0.4	13	8,026	sw.	42	se.	28	10	13	8	5.2	
San Francisco	153	161	167	29.92	30.08	.00	48.9	− 5.6	63	15	54	39	29	44	15	44	40	74	4.56	+ 1.5	15	8,388	w.	36	sw.	28	13	8	10	4.6	
Point Reyes Light	.....	12	....	.....	.....	.....	46.8	− 3.8	54	17	51	35	29	43	14	.....	.....	.....	5.87	+ 1.4	17	.....	nw.	....	.....	...	13	9	9	....	
S. Pac. Coast Reg.							51.9	− 4.5											1.85	− 0.1											
Fresno	332	67	70	29.69	30.05	+ .02	48.6	− 6.6	71	25	58	31	21	39	28	43	36	68	1.64	+ 0.3	10	4,624	nw.	33	sw.	6	19	6	6	3.4	
Los Angeles	330	74	76	29.68	30.04	− .01	53.0	− 4.1	78	24	62	38	21	44	31	47	43	74	2.31	− 0.7	7	3,977	sw.	22	nw.	29	11	13	7	4.3	
San Diego	69	59	70	29.97	30.05	− .02	54.2	− 2.8	70	24	60	40	30	48	26	48	43	71	1.53	0.0	8	4,527	nw.	24	nw.	29	18	4	9	4.3	
San Luis Obispo	201	10	46	29.88	30.10	.....	50.6	.....	78	24	62	34	17	40	36	44	38	68	3.17	.....	13	4,699	w.	24	s.	6	18	8	5	3.8	

NOTE.—The data at stations having no departures are not used in computing the district averages. Letters of the alphabet denote number of days missing from the record. * Two or more directions, dates, or years. † Received too late to be considered in departures, etc.

TABLE II.—*Meteorological record of voluntary and other cooperating observers, March, 1897.*

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Alabama.	°	°	°	*Ins.*	*Ins.*
Alco†	85	32	66.8	5.14	
Ashville †	82	29	55.7	7.42	
Bermuda†	86	31	65.9	5.76	
Birmingham	85	36	61.0	6.98	
Brewton†	84	44	67.5	4.75	
Bridgeport†	.....	.....	.....	13.17	
Citronelle†	82	41	67.0	7.39	
Claiborne Landing†	.....	.....	.....	7.10	
Clanton†	80	34	60.7	7.57	
Cordova†	.....	.....	.....	10.27	
Daphne†	86	29	66.6	10.03	
Decatur†	81	28	55.4	15.81	
Demopolis	86	40	62.8	7.10	
Elba†	80	31	65.4	11.63	
Eufaula *a*†	85	39	63.4	11.29	
Eufaula *c*†	.....	.....	.....	9.73	
Evergreen†	83	30	62.9	8.79	
Florence *a*†	.....	.....	.....	17.89	
Florence *b*†	80	34	56.6	16.15	
Fort Deposit † [6]	84	30	60.6	8.80	
Gadsden	80	31	57.3	8.15	
Goodwater†	83	32	58.6	8.38	
Greensboro†	84	38	60.9	6.54	
Hamilton	81	30	55.9	15.48	
Healing Springs†	87	30	62.7	5.95	
Highland Home †	85	39	63.8	8.12	
Jasper†	80	29	57.2	14.35	
Livingston	84	36	62.8	4.29	
Lock No. 4	82	25	57.0	8.23	
Madison Station†	81	25	54.4	13.68	
Marion†	83	37	60.4	8.83	
Mount Willing†	85	38	62.6	12.17	
Newbern†	83	36	61.8	7.53	
Newburg	83	29	56.1	20.83	
Newton†	85	34	62.2	14.51	
Oneonto	.....	.....	.....	10.23	
Opelika†	82	29	59.2	9.09	
Oxanna†	78	30	56.4	8.65	
Pineapple	85	32	63.3	6.03	
Pushmataha†	86	36	63.9	9.75	
Rockmills†	85	30	59.6	7.71	
Scottsboro †	82	27	55.0	13.47	
Selma †	83	28	62.0	13.43	
Sturdevant†	.....	.....	.....	6.59	
Talladega *1	80	36	58.7	8.97	
Tallassee †	.....	.....	.....	11.25	
Thomasville	85	35	63.4	12.33	
Tuscaloosa†	82	33	60.2	5.63	
Union†	84	34	60.3	5.84	
Union Springs†	81	37	62.4	12.94	
Uniontown†	87	37	62.7	9.11	
Valleyhead	80	28	56.1	13.73	
Warrior†	.....	.....	.....	8.92	
Wetumpka	82	34	62.2	14.02	
Wilsonville†	.....	.....	.....	6.78	
Alaska.					
Killisnoo	45	4	29.8	2.70	14.0
Arizona.					
Arizona Canal Co. Dam†	83	31	54.6	0.21	
Benson *2	77	32	51.8	0.65	
Bisbee†	71	25	50.0	0.10	
Buckeye†	94	26	56.4	0.20	
Buttes	.....	.....	.....	1.03	
Calabasas	74	27	48.4	0.23	
Casa Grande *2	80	40	57.6	0.00	
Congress	73	29	50.6	0.85	T.
Dragoon	.....	.....	.....	0.32	
Dragoon Summit	.....	.....	.....	0.10	
Dudleyville	80	21	52.0	1.07	
Eagle Pass *2	.....	16	40.0	0.45	0.5
Parleys Camp†	77	26	52.0	0.50	
Flagstaff †	60	10	34.9	1.60	16.0
Fort Apache	70	13	40.7	1.79	
Fort Grant †	74	22	49.4	0.27	
Fort Huachuca†	73	27	49.4	0.83	
Fort Mohave	90	33	57.2	0.26	
Gilabend *a* *2	84	37	57.9	0.40	
Gisela†	82	30	48.6	1.83	
Glendale	81	25	51.5	0.39	
Holbrook†	72	14	41.2	0.48	
Ingleside	82	27	53.5	0.15	
Lochiel *1	71	28	48.4	0.28	
Maricopa *2	88	41	67.7	0.00	
Mesa†	84	27	53.2	0.72	
Mount Huachuca	70	29	48.8	1.08	
Natural Bridge	.....	.....	.....	1.57	0.5
Oracle†	73	25	48.6	1.55	
Oro Blanco	73	25	50.8	0.67	
Pantano *2	71	30	50.7	T.	
Parker	90	26	56.6	0.19	
Payson	.....	.....	.....	2.66	1.0
Peoria†	71	30	51.8	0.40	
Phœnix	83	26	53.4	0.49	
Pinal Ranch	.....	.....	.....	3.09	
Reymert †	83	26	54.9	1.64	
St. Helena Ranch	.....	.....	.....	0.42	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Arizona—Cont'd.	°	°	°	*Ins.*	*Ins.*
San Carlos†	80	22	50.2	0.77	
San Simon *2	82	30	51.5	0.00	
Showlow	.....	.....	.....	1.31	.....
Signal†	79	26	51.8	0.30	
Sulphur Spring Valley†	.....	.....	.....	0.27	0.5
Texas Hill *2	88	40	56.5	0.18	
Tombstone	75	26	51.2	0.25	
Tucson *c*†	80	22	54.0	0.13	
Walnut Grove	.....	.....	.....	0.06	
Walnut Ranch *†1	68	23	45.4	0.46	
Whipple Barracks†	71	12	37.4	1.21	4.0
Willcox *2	73	35	51.2	0.29	
Arkansas.					
Amity	82	30[4]	57.4	12.09	
Arkansas City†	.....	.....	.....	7.07	
Beebranch † [5]	80	26	54.6	7.92	
Blackton	.....	.....	.....	16.90	
Blanchard Springs†	86	30	61.2	.....	
Brinkley	84	32	56.2	13.05	
Camden *a*†	.....	.....	.....	8.04	
Camden *b*†	85	27	58.4	8.48	
Canton *1	78	28	52.8	.....	
Conway	85	29	57.4	8.53	
Corning†	80	29	52.4	8.21	
Dallas	80	28	55.6	11.29	
Dardanelle	.....	.....	.....	8.15	
Elon†	88	29	61.8	7.97	
Fayetteville†	76	18	52.2	5.40	
Forrest	82	31	55.7	13.78	
Fulton†	.....	.....	.....	7.29	
Helena *a*†	.....	.....	.....	13.86	
Hot Springs *a*	84	30	56.9	12.58	
Hot Springs (near)	.....	.....	.....	13.31	
Jonesboro	85	30	54.2	8.28	T.
Keesees Ferry†	84	30	53.2	7.28	
Lacrosse†	79	29	49.8	7.59	
Lonoke *1	81	33	57.7	12.18	
Luna Landing *6	80	42	59.7	9.02	
Luthervile *1	84	26	57.2	.....	
Malvern†	85	28	58.5	10.28	
Marianna *1	80	38	58.4	.....	
Marvell	82	37	57.9	12.76	
Moore	.....	.....	.....	17.04	
Mossville	72	19	50.2	12.68	
Mount Nebo†	77	24	52.2	9.07	
New Gascony *1	78	38	58.6	8.89	T.
Newport *a*†	.....	.....	.....	8.81	
Newport *b*†	80	29	54.4	9.09	
Newport *c*†	81	31	55.8	8.50	
Oregon *1	78	18	48.7	.....	
Osceola†	78	35	54.2	9.70	
Ozark †	82	27	55.4	9.28	
Picayune †	83	32	60.4	8.28	
Pinebluff †	87	35	60.8	11.33	
Pocahontas†	80	29	51.2	7.62	
Rison	85	33	57.6	.....	
Russellville	82	30	56.0	7.60	
Silver Springs †	77	13	49.8	5.63	
Stuttgart†	81	34	56.8	8.91	
Texarkana†	88	31	60.4	4.93	
Warren †	87	31	58.8	8.57	
Washington *†1	85	34	59.4	7.28	
Wiggs *1	84	28	58.9	14.65	
Witts Springs †	75	30	50.2	7.93	
California.					
Adin	56	11	32.8	1.98	5.2
Agnew	66	30	48.9	3.38	
Arlington Heights	80	28	51.2	1.28	
Athlone *2	68	39	49.3	2.08	
Azusa	.....	.....	.....	8.25	
Ballast Point L. H	.....	.....	.....	1.99	
Barstow†	70	38	53.6	0.11	
Bear Valley†	.....	.....	.....	19.12	160.0
Berkeley	62	35	47.7	5.97	
Bishop†	70	15	39.6	1.75	16.6
Bishop Creek *2	77	26	44.8	0.90	7.0
Boca *2	59	—16	24.1	8.35	83.5
Bodie†	42	—14	17.4	3.40	25.0
Bowmans Dam *†1	60	11	29.6	18.94	127.0
Caliente *2	67	35	49.5	2.41	
Calloway Canal †	.....	.....	.....	0.91	
Campbell	67	29	47.2	3.22	
Cape Mendocino L. H	.....	.....	.....	7.12	
Castle Pinckney *1	76	44	53.1	3.98	
Cedarville†	54	10	30.8	1.90	30.5
Centerville *1	71	42	51.9	4.98	
Chico *2	75	33	52.0	1.44	
Chino *†	75	34	49.3	3.48	
Cisco *2	40	6	24.2	.....	152.0
Claremont†	73	28	48.3	4.37	
Corning *2	69	31	46.2	1.90	
Coronado	75	44	59.9	1.53	
Craftonville	76	30	48.8	2.82	
Crescent City†	55	30	43.6	12.87	2.0
Crescent City L. H	.....	.....	.....	12.34	
Daunt	.....	.....	.....	6.07	1.0

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
California—Cont'd.	°	°	°	*Ins.*	*Ins.*
Davisville *b*	82	35	56.0	2.97	
Delano *2	75	33	50.1	0.87	
Delta *2	66	27	40.8	5.33	7.0
Descanso *2	66	30	42.0	5.21	
Drytown	71	25	45.6	5.45	
Dunnigan *2	66	34	50.4	1.52	
Durham *1	65	27	43.0	2.16	
East Brother L. H	.....	.....	.....	3.85	
Edgwood *2	58	16	37.6	2.35	5.0
Edmanton *1	53	9	29.8	12.07	85.0
Escondido	77	23	50.2	.....	
Fallbrook *1	80	37	49.8	4.37	
Famosa †	63	32	46.5	1.05	
Folsom City *b* *1	73	35	49.2	5.26	
Fordyce Dam †	.....	.....	.....	12.55	109.0
Fort Bragg†	.....	.....	.....	6.27	
Fort Ross	61	32	47.4	10.95	
Fort Tejon	.....	.....	.....	3.63	13.0
Georgetown†	64	23	39.9	13.65	30.0
Glendora	.....	.....	.....	4.60	
Goshen *2	74	28	47.9	1.75	
Grand Island *2	71	34	50.6	1.03	
Grass Valley	.....	.....	.....	8.72	7.0
Greenville †	61	5	34.4	6.83	33.5
Guinda	.....	.....	.....	2.11	
Healdsburg *1	68	32	46.0	5.22	
Hollister	73	29	47.6	3.38	
Hueneme	.....	.....	.....	1.90	
Humboldt L. H	.....	.....	.....	8.06	
Hydesville	66	28	43.7	8.03	T.
Indio *2	85	35	62.7	.....	
Iowa Hill *1	64	27	39.3	11.33	21.0
Jackson	58	22	37.9	7.66	
Jolon	.....	.....	.....	3.54	
Keeler *2	77	36	50.4	0.13	
Keene *2	65	30	42.8	3.27	1.0
Kennedy Gold Mine	68	27	44.4	7.02	
Kernville	.....	.....	.....	2.57	
King City *2	64	32	49.5	2.20	
Kingsburg *2	70	35	51.0	1.35	
Kono Tayee	65	31	45.2	3.76	
Lagrange *3	71	30	49.7	3.84	
Laporte *†1	56	12	29.0	13.51	111.0
Las Fuentes Ranch	.....	.....	.....	3.12	
Lemoore *a* *2	72	31	61.9	0.99	
Lime Kiln	75	28	49.5	.....	
Lime Point L. H	.....	.....	.....	4.19	
Lodi	71	30	48.4	3.88	
Los Alamos †	.....	.....	.....	2.89	
Los Gatos *b*	65	34	46.7	6.60	
Lytton Springs	70	35	49.0	5.50	
McMullin *1	72	30	48.9	.....	
Malakoff Mine *1	66	24	38.8	11.15	39.5
Mammoth Tank *2	87	47	61.0	T.	
Manzana	68	22	38.0	1.71	
Mare Island L. H	.....	.....	.....	4.58	
Marysville	72	31	50.1	1.75	
Merced *2	70	34	50.6	1.29	
Middletown *†1	71	29	42.8	7.54	
Mills College	.....	.....	.....	6.64	
Milton (near) *1	75	32	49.9	5.37	
Modesto *2	80	35	53.2	1.83	
Mohave *2	75	27	45.5	0.82	
Mokelumne Hill *2	.....	31	41.2	9.00	
Monterey *2	68	36	52.3	3.70	
Morena Dam *2	70	21	39.5	3.69	
Mount Breckenridge	.....	.....	.....	3.15	31.5
Mount Glenwood *1	70	38	49.3	3.96	
Mutah Flat †	.....	.....	.....	3.59	15.0
Needles	86	38	59.7	0.00	
Nevada City †	63	23	39.0	9.13	18.0
Newcastle *a*†	66	28	44.2	5.14	
Newhall *2	80	29	50.4	3.32	
Nordhoff †	80	25	49.2	2.91	
North Ontario	72	32	49.0	5.29	
North San Juan *1	70	24	45.1	7.88	9.5
Oakland *a*	64	36	48.6	6.00	
Ogilby *2	85	53	63.4	0.00	
Oleta *1	62	30	42.4	8.13	3.5
Orangevale†	69	30	48.0	4.31	
Orland *2	70	32	48.7	1.92	
Oroville *b*	80	31	51.0	2.23	
Otay Dam *1	74	45	54.4	0.98	
Palermo†	72	29	49.4	1.92	
Paso Robles *b*	69	33	48.0	2.88	
Peachland *1	69	32	46.7	6.62	T.
Picacho	85	42	59.7	1.20	
Piedras Blancas L. H	.....	.....	.....	3.73	
Pigeon Point L. H	.....	.....	.....	3.07	
Pilot Creek	.....	.....	.....	15.20	96.0
Placerville	62	23	40.9	9.49	.....
Point Ano Nuevo L. H	.....	.....	.....	3.46	
Point Arena L. H	.....	.....	.....	6.23	
Point Bonita L. H	.....	.....	.....	6.57	
Point Conception L. H	.....	.....	.....	1.32	
Point Fermin L. H	.....	.....	.....	1.77	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
California—Cont'd.	°	°	°	*Ins.*	*Ins.*
Point George L. H.	.....	.....	.....	4.22	
Point Hueneme L. H.	.....	.....	.....	2.37	
Point Loma L. H.	.....	.....	.....	1.01	
Point Montara L. H.	.....	.....	.....	4.94	
Point Pinos L. H.	.....	.....	.....	4.71	
Point Reyes L. H.	.....	.....	.....	5.71	
Point Sur L. H.	.....	.....	.....	3.64	
Pomona (near)	78	30	52.4	3.34	
Poway *[3]	71	32	47.6	2.89	
Quincy †	60	8	36.4	8.53	30.0
Ravenna *[3]	73	37	50.1	2.90	
Redding *b* †	64	29	46.3	5.29	
Represa	66	30	48.1	4.95	
Riovista	71	32	48.4	4.31	
Roe Island L. H.	.....	.....	.....	1.95	
Roseville (near) *[5]	76	26	46.0	3.39	
Rosewood	66	23	44.2	2.17	T.
Sacramento *a*	73	33	50.9	3.19	
Salinas *[3]	60	35	44.1	3.80	
Salton *[3]	80	48	59.2	0.00	
San Bernardino †	79	30	51.2	3.41	
San Jose *b*	70	26	47.4	2.64	
San Leandro *[1]	70	40	53.2	6.03	
San Louis L. H.	.....	.....	.....	2.77	
San Mateo *[3]	65	39	52.5	6.42	
San Miguel *[3]	71	29	47.8	1.78	
Santa Ana *[5]	82	48	61.1	2.15	
Santa Barbara L. H.	.....	.....	.....	2.52	
Santa Clara *a*	.....	.....	.....	3.51	
Santa Cruz *b* †	70	30	49.2	4.86	
Santa Cruz L. H.	.....	.....	.....	4.80	
Santa Maria	80	36	53.6	2.52	
Santa Monica *[3]	77	45	59.6	1.64	
Santa Paula *b* †	77	29	48.4	3.24	
Santa Rosa *[3]	71	32	47.2	5.50	
Saticoy	.....	.....	.....	2.69	
Shasta	.....	.....	.....	7.18	
Sierra Madre	75	36	51.3	4.08	
Sneddens Ranch *† [1]	62	10	39.1	2.71	9.0
S. E. Farallone L. H.	.....	.....	.....	3.64	
Stanford University	66	33	47.6	4.34	
Stockton *a*	70	32	48.2	2.78	
Summerdale †	49	10	29.3	11.35	83.0
Susanville †	51	12	34.8	2.66	3.5
Sutter Creek * [5]	62	22	38.8	5.15	
Tecarte Dam *[4]	79	30	44.0	2.86	
Tehama *[3]	66	35	51.1	1.91	
Templeton *[3]	68	34	48.1	4.01	
Trinidad L. H.	.....	.....	.....	7.53	
Truckee *[3]	52	−10	25.7	.....	95.0
Tulare *b*	.....	.....	.....	1.51	
Tulare *c*	82	26	50.8	1.29	
Turlock *b* †	72	30	47.2	1.93	
Ukiah †	65	26	44.6	6.87	2.0
Upper Lake	68	25	44.2	4.58	2.0
Upper Mattole *[1]	63	22	45.3	13.29	0.5
Vacaville *a* *[1]	74	37	48.9	5.23	
Ventura †	79	29	49.6	1.77	
Volcano Springs *[3]	98	42	66.0	0.00	
Walnutcreek	72	32	50.2	4.51	
West Palmdale	.....	.....	.....	1.31	
Westpoint †	.....	.....	.....	7.30	9.0
Wheatland †	68	28	47.3	1.78	
Williams *[3]	68	35	49.5	1.48	
Wilmington *[3]	77	43	59.4	.....	
Wire Bridge *[5]	70	29	47.0	7.13	
Yerba Buena L. H.	.....	.....	.....	3.50	
Yreka †	61	46	37.8	2.18	T.
Yuba City *[5]	67	40	52.0	2.10	
Colorado.					
Alma †	.....	.....	.....	2.32	.....
Antlers †	63	2	32.4	3.50	35.2
Arkins	.....	.....	.....	2.32	28.5
Breckenridge †	53	−21	19.2	3.53	35.4
Canyon †	74	10	40.1	0.36	1.5
Castlerock †	69	0	35.0	2.50	23.0
Collbran	.....	.....	.....	1.29	13.0
Colorado Springs †	64	6	34.6	0.48	6.0
Cope †	67	− 1	35.6	2.25	19.9
Cripple Creek †	49	− 6	22.8	1.35	14.9
Delta	70	11	37.1	1.50	...
Downing †	72	5	38.9	0.30	T.
Dumont †	57	0	27.8	2.00	20.0
Durango	56	6	33.8	2.72	24.0
Fleming	.....	.....	.....	2.80	28.0
Fort Collins †	65	− 7	32.3	2.15	22.0
Fort Morgan	.....	.....	.....	1.51	10.0
Fox	.....	.....	.....	3.32	13.0
Garnett	59	− 2	27.2	0.36	2.5
Gleneyrie †	64	5	34.2	1.18	14.0
Gold Hill	66	− 2	31.8	5.00	50.0
Grand Junction †	64	17	39.0	1.05	4.0
Greeley †	73	− 2	34.8	2.02	.....
Gulch †	52	− 9	24.8	2.92	30.5
Gunnison †	57	−14	25.0	1.30	13.0
Holly	.....	.....	.....	0.15	T.
Holyoke *a*	70	0	39.2	3.14	12.5
Husted †	71	3	36.1	2.06	19.5
La Jara	64	10	31.8	.....	.....
Lake Moraine †	50	−11	24.0	2.05	20.5
Lamar †	78	12	41.3	0.38	2.8
Laporte	.....	.....	.....	2.15	20.5
Las Animas †	75	8	38.6	3.60	3.0
Lay †	55	−14	23.4	5.01	50.0
Leadville (near) *† [1]	47	− 8	20.6	2.77	27.8
Leroy †	65	1	33.6	1.66	16.3
Longmont †	70	− 3	34.1	2.40	24.0
Longs Peak	53	−11	22.6	1.96	24.0
Loveland	.....	.....	.....	1.98	18.5
Meeker †	58	−10	28.8	3.11	32.9
Millbrook †	68	− 8	31.4	1.82	16.0
Minneapolis †	76	8	40.8	1.00	6.0
Montrose †	64	5	36.2	3.41	34.1
Moraine †	53	− 9	25.8	1.86	20.5
Pagoda †	56	−16	26.5	4.92	48.5
Paonia †	.....	.....	.....	0.45	4.5
Parachute †	64	− 9	31.4	0.67	6.7
Pinkhamton *[3]	65	− 9	19.8	2.30	22.0
Rangely †	61	− 9	28.5	2.37	23.8
Redcliff	.....	.....	.....	2.23	22.3
Rico †	48	−10	22.6	6.40	64.0
Rockyford †	74	7	39.8	0.20	.....
Ruby	.....	.....	.....	21.00	210.0
Saguache †	55	0	28.4	0.60	6.0
St. Cloud	.....	.....	.....	4.10	41.0
San Luis †	64	− 8	26.8	1.32	13.5
Santa Clara *[1]	59	0	31.0	1.80	18.0
Seibert †	.....	.....	.....	2.00	20.0
Sherwood Ranch	52	−10	22.0	.....	.....
Smoky Hill Mine †	58	− 9	28.0	6.30	63.0
Stamford *[1]	64	− 4	21.4	1.40	14.0
Steamboat Springs †	70	−18	24.8	2.55	25.5
Sulphur Springs †	66	−16	28.8	2.05	25.0
Surface Creek †	68	1	34.8	2.10	18.5
Thon †	72	− 3	34.2	3.88	38.0
T. S. Ranch †	63	10	33.4	1.88	19.0
Twin Lakes	.....	.....	.....	1.38	14.0
Walden	51	−17	22.0	1.99	19.9
Wallet †	.....	.....	.....	2.15	20.0
Wray †	71	9	37.6	1.79	15.3
Yuma	.....	.....	.....	2.80	28.0
Connecticut.					
Bridgeport	62	12	38.0	4.43	4.8
Canton †	60	− 4	34.0	3.41	3.5
Colchester	66	6	36.8	3.26	4.2
Middletown	64	8	37.6	3.83	4.0
New London †	58	10	36.4	2.48	1.8
Norwalk	62	9	37.3	3.74	3.5
Southington *[1]	60	4	35.7	2.55	4.5
Storrs	62	2	34.6	3.66	4.2
Voluntown †	64	4	37.0	3.40	.....
Waterbury	64	7	37.4	2.67	5.5
West Cornwall †	57	1	33.2	2.09	6.4
Windsor	58	5	35.0	3.48	5.3
Delaware.					
Kirkwood *[1 d]	64	28	41.1	.....	
Milford	79	24	46.6	2.04	
Millsboro	80	22	46.0	3.33	
Newark	69	20	42.0	2.27	
Seaford †	76	24	46.8	3.25	T.
District of Columbia.					
Distributing Reservoir *[5]	75	30	46.6	2.81	.....
Receiving Reservoir *[5]	74	30	46.2	2.86	.....
West Washington	82	24	45.8	2.83	T.
Florida.					
Amelia †	86	46	65.8	2.98	
Archer †	94	44	70.8	0.79	
Bartow	90	41	72.5	0.46	
Brooksville †	89	46	71.0	0.92	
Clermont †	92	48	73.8	0.45	
De Funiak Springs	82	38	65.8	7.82	
Earnestville †	92	41	72.8	1.04	
Emerson †	92	40	68.8	1.29	
Eustis †	92	36	71.8	1.34	
Federal Point †	89	45	68.4	1.31	
Fort Meade †	90	35	70.3	0.59	
Frostproof †	92	45	74.2	0.39	
Gainesville	90	45	69.0	0.96	
Grasmere †	88	47	71.9	3.29	
Haywood	85	38	65.7	6.94	
Huntington	89	48	71.4	0.52	
Kissimmee	.....	48	.....	0.28	
Lake Butler †	88	48	68.0	2.89	
Lake City †	90	45	71.5	3.09	
Lemon City †	90	48	74.2	0.75	
Macclenny †	89	42	69.2	2.47	
Manatee †	90	42	70.3	1.15	
Merritts Island †	88	52	73.2	2.45	
Milton *[1]	89	40	67.4	6.78	
Mullet Key †	81	56	71.8	0.98	
Myers †	87	45	73.0	1.09	
New Smyrna †	90	40	70.0	0.32	
Oakhill *[1]	88	56	70.9	.....	
Ocala *† [1]	89	46	69.8	1.05	
Orange City	90	45	72.0	0.76	
Orange Park	93	47	69.0	2.29	
Orlando †	88	48	70.9	0.38	
Oxford *† [1]	93	48	71.3	0.00	
Plant City †	92	40	70.0	1.61	
Quincy	83[d]	39[d]	66.6[d]	6.70	
St. Francis †	90	37	69.8	0.93	
St. Francis Barracks	86	39	67.4	1.24	
Tallahassee †	83	42	65.9	8.84	
Tarpon Springs †	91	46	71.8	1.23	
Georgia.					
Adairsville †	79	29	53.5	7.60	
Albany †	87	43	64.4	11.51	
Allentown †	83	35	61.6	9.58	
Americus †	85	38	62.5	11.57	
Belleville	85	40	65.1	5.83	
Blakely *† [6]	84	40	64.3	12.62	
Brag †	83	35	62.4	9.37	
Canton †	.....	.....	.....	7.88	
Cartersville	77	30	55.6	7.76	
Cedartown	88	30	56.0	8.35	
Clayton †	77	34	52.2	9.36	
Columbus	86	37	61.8	9.91	
Covington	78	23	53.8	7.58	
Dahlonega †	79	24	52.2	9.98	
Diamond	77	23	51.5	9.27	
Dublin	.....	.....	.....	8.95	
Elberton †	83	32	54.9	7.94	
Fleming †	82	34	59.0	4.03	
Fort Gaines	83	36	62.5	12.70	
Gainesville	79	26	53.0	6.90	
Gillsville †	79	30	53.6	6.50	
Hawkinsville	85	30	58.4	9.95	
Hephzibah *† [6]	82	42	60.1	6.35	
Jesup	89	41	65.9	4.27	
Lagrange †	82	34	61.6	9.40	
Leverett	86	27	54.4	5.44	
Louisville †	88	34	57.8	10.77	
Macon † *b*	.....	.....	.....	10.58	
Marietta	80	27	54.2	7.14	
Marshallville †	80	40	62.8	10.06	
Milledgeville †	83	34	60.0	10.63	
Millen	90	27	60.2	7.29	
Monticello *† [1]	74	41	54.6	9.70	
Morgan †	86	33	64.4	13.31	
Newnan †	80	29	55.6	8.43	
Piscola	88	42	67.6	5.45	
Point Peter	79	27	53.3	5.68	
Poulan †	89	38	64.5	9.45	
Quitman †	87	39	66.9	4.12	
Ramsey	80	25	56.0	9.91	
Resaca †	.....	.....	.....	10.00	
Reynolds	.....	.....	.....	7.82	
Rome †	86	30	55.3	9.80	
Sparta	86	33	57.9	7.64	
Talbotton †	80	32	59.6	12.99	
Tallapoosa	79	30	54.8	8.10	
Thomasville †	85	37	66.1	5.47	
Toccoa †	78	33	53.1	7.46	
Washington †	.....	.....	.....	5.38	
Whitesburg	.....	.....	.....	7.91	
Idaho.					
American Falls	52	2	29.5	1.82	.....
Blackfoot †	50	−13	27.9	0.10	1.0
Boise Barracks †	60	7	36.4	3.18	11.5
Burnside †	54[n]	0	25.9[e]	.....	.....
Chesterfield †	52	−22	20.1	2.99	21.0
Cœur d'Alene	50	0	30.8	.....	.....
Corral *† [1]	42	−13	22.7	3.10	31.0
Downey	.....	.....	.....	3.56	25.0
Fort Sherman †	55	− 4	30.4	3.59	24.6
Gimlet †	56	−17	25.9	6.00	50.0
Idaho City	47	−13	27.0	6.74	44.9
Kootenai †	57	1	30.0	4.50	40.0
Lake †	42	−21	15.0	1.50	15.0
Lewiston *a* †	63	15	39.6	0.97	1.3
Lost River †	.....	.....	.....	1.88	22.0
Martin †	65	−23	19.1	3.70	37.0
Minidoka †	50	3	27.6	1.30	13.0
Moscow †	56[g]	0[f]	32.5[f]	3.45	.....
Murray †	51	−11	28.2	8.42	62.0
Nampa	63	10	36.7	1.46	2.6
Oakley	67[h]	7[h]	33.6[h]	0.10	1.0
Ola †	53	− 9	32.2	4.90	17.6
Paris	57	−17	22.4	2.15	20.0
Payette †	64	16	37.5	2.46	7.4
Pollock †	60	11	37.8	1.52	.....
Rexburg †	46	.....	.....	0.86	4.8
Roseberry †	46	−22	22.5	1.99	19.8
Salubria †	56	− 6	32.2	3.76	27.9
Soldier †	54	−21	24.2	2.15	18.5
Swan Valley †	52	−22	25.8	1.79	13.7
Warren †	56	−26	20.9	2.06	.....
Yellowjacket †	.....	.....	.....	3.98	.....

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Illinois.	°	°	°	*Ins.*	*Ins.*
Albion†	71	23	46.1	10.19	
Alexander†	74	15	41.8	4.42	1.0
Ashton*†[1]	61	12	33.4	4.21	18.5
Atlanta*[5]	70	18	38.9	3.64	1.0
Atwood *a*†[2]	.....	16	38.0	6.37	0.5
Atwood *b*	.....	.....	.....	4.90	.....
Aurora *a*	67	12	35.5	3.58	.....
Aurora *b*	63	10	34.0	4.85	17.0
Beardstown†	.....	.....	.....	4.52	T.
Bloomington†	67	14	38.6	4.09	.....
Bushnell†	74	8	39.0	4.43	8.5
Cambridge	65	9	35.4	4.08	19.0
Carlinville†	74	19	43.3	6.72	1.0
Carlyle	.....	.....	.....	10.24	.....
Carrollton	74	9	40.6	4.63	T.
Catlin	66	20	43.0	4.24	
Charleston	68	23	41.8	5.26	0.1
Chemung*[1]	60	— 2	29.8	5.25	17.2
Chester	.....	.....	.....	8.34	
Cisne†	77	22	44.5	12.00	
Clearcreek†	65	2	37.0	3.79	10.0
Coatsburg†	73	15	42.0	4.16	5.0
Cobden†	76	25	47.9	12.64	1.5
Cordova	.....	.....	.....	2.34	.....
Decatur†	70	18	41.6	5.08	0.5
Dixon†	58	10	34.4	4.25	14.8
Duquoin*[1]	76	26	47.6	10.70	0.2
Dwight†	65	6	36.6	3.57	8.2
East Peoria†	69	9	38.7	3.71	11.0
Effingham†	71	22	44.0	7.54	T.
Evanston*[10]	48	10	32.4	.....	.....
Fort Sheridan†	50	11	32.8	4.16	19.1
Friendgrove*†[4]	.....	28	45.3	10.67	
Galva†	66	8	35.2	4.64	10.8
Glenwood*†[1]	69[c]	12[c]	36.6[c]	2.77	3.0
Golconda†	79	26	49.5	11.44	.....
Grafton†	.....	.....	.....	6.97	
Greenville†	68	22	42.3	7.50	.....
Griggsville†	75	12	42.2	4.20	.....
Halliday*[5]	72[d]	29[d]	49.8[d]	11.98	0.5
Havana†	70	15	41.4	4.58	T.
Herrin*[1]	74	32	50.8	11.43	2.0
Hillsboro†	74	19	42.8	6.04	T.
Iron†	78	28	48.2	9.59	
Joliet†	65	12	38.9	3.80	10.0
Jordans Grove†	75	25	46.4	10.51	0.3
Kankakee *a*†	63	11	37.2	3.09	.....
Kishwaukee	65	7	32.2	4.63	17.5
Knoxville *a*[5]	68	8	36.0	5.67	9.5
Lagrange†	62	14	32.8	4.00	9.0
Laharpe*[1]	62	7	36.6	6.22	18.0
Lanark*†[1]	58	8	32.6	3.30	3.3
Lexington	66	10	38.6	4.01	.....
Loami†	.....	.....	.....	4.11	.....
Louisville†	72	23	43.7	9.42	T.
McLeansboro†	74	26	47.4	11.29	T.
Martinsville†	68	22	42.4	7.27	T.
Martinton†	65	12	38.8	3.96	1.0
Mascoutah*[5]	72	24	46.3	9.91	0.2
Mattoon*[1]	67	25	44.0	4.36	.....
Minonk†	64	11	37.1	3.18	8.1
Monmouth†	69	6	36.9	2.63	12.3
Morgan Park	62	13	35.6	3.65	.....
Morrisonville†	71	17	41.8	6.02	.....
Mount Carmel†	.....	.....	.....	10.22	T.
Mount Pulaski	71	12	41.0	3.82	0.5
Mount Vernon	74	21	45.6	10.18	
New Burnside†	78	26	48.9	10.97	T.
Olney *a*[1]	72	22	46.6	11.77	T.
Oregon†	60	6	32.0	3.05	.....
Oswego*[1]	63	12	33.5	3.56	10.2
Ottawa†	65	5	35.7	4.47	6.0
Palestine†	70	26	43.8	11.02	T.
Peoria *a*†	.....	.....	.....	4.42	4.0
Peoria *b*†	65	16	40.2	4.70	4.7
Philo†	68	19	41.0	3.68	T.
Plumhill†	74	22	45.5	9.43	
Rantoul†	67	19	40.0	3.41	0.6
Reynolds	67	5	34.9	2.59	7.5
Riley†	58	9	31.2	3.87	14.4
Robinson*†[3]	65	28	43.0	11.33	T.
Rockford†	65	12	33.9	4.90	18.0
Rose Hill*†[1]	74	28	45.2	10.40	
Roundgrove†	66	8	34.6	3.33	10.1
St. Charles*†[1]	64	14	34.2	4.37	15.3
St. John*†[1]	72	26	45.9	11.55	
Scales Mound	60	0	30.8	2.67	6.7
Streator†	67	9	36.9	4.08	11.2
Sycamore†	64	12	32.8	4.31	14.4
Tiskilwa*†[3]	59	11	32.1	4.55	16.0
Tuscola†[3]	69	19	41.1	4.16	T.
Warsaw†	.....	.....	.....	2.37	0.4
Walnut†	56[b]	10	34.4[d]	5.05	17.8
Wheaton*[3]	.....	18	32.8	5.43	15.5
Winnebago†	62	6	32.0	4.87	18.0
Zion†	60	7	32.6	3.28	5.0

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Indiana.	°	°	°	*Ins.*	*Ins.*
Anderson†	64	21	42.4	5.04	1.0
Angola*[1]	62	13	36.6	3.64	4.4
Auburn†	69	13	38.4	2.42	T.
Bedford	72	23	45.8	.....	.....
Bloomington†	68	23	44.2	10.63	T.
Bluffton†	71	13	39.9	4.68	0.5
Bright†	70	23	44.7	9.50	0.7
Butlerville†	73	20	45.5	13.03	
Cambridge City†	68	18	42.6	7.60	0.8
Columbia City*[1]	63	11	37.3	4.51	3.0
Columbus†	71	20	44.6	9.48	
Connersville†	69	21	41.7	6.87	0.2
Delphi†	65	17	40.2	3.83	0.2
Edwardsville*†[1]	73	25	48.3	8.09	
Evansville†	80	27	47.1	10.96	
Farmland†	63	20	42.2	6.23	0.5
Fort Wayne	67	16	38.7	.....	T.
Greencastle†	64	9	41.5	6.49	1.1
Greensburg	70	22	46.0	8.86	T.
Hammond†	64	16	36.8	7.35	
Huntington	66	15	38.8	3.23	0.5
Jasper†	75	26	48.0	9.50	
Jeffersonville	75[f]	28[f]	50.3[f]	8.55	
Knightstown†	67	17	42.4	7.40	0.5
Knox	66	22	41.2	.....	.....
Kokomo†	66	21	42.0	3.77	0.4
Laconia	74	24	47.0	9.55	
Lafayette†	67	19	41.2	3.87	0.1
Logansport *b*†	65	19	39.4	2.89	
Madison†	73	25	46.0	8.09	T.
Marengo†	76	24	48.1	9.19	T.
Marion†	67	18	41.7	4.04	2.0
Mauzy†	67	19	42.2	6.94	1.0
Mount Vernon†	80	23	47.9	8.43	
Northfield†	63	20	42.0	5.31	T.
Princeton*[1]	75	26	46.6	7.75	
Richmond	69	19	43.4	6.58	
Rockville†	66	20	42.7	5.14	T.
Rushville†	.....	.....	.....	7.70	T.
Salem	.....	20	.....	7.82	
Scottsburg	72	21	45.7	8.01	
Seymour†	66	24	43.9	12.95	T.
Shelbyville	68	25	42.9	7.03	1.5
South Bend†	66	11	36.6	3.31	9.0
Syracuse†	.....	.....	.....	4.38	7.5
Terre Haute†	67	25	44.3	6.29	
Tipton†	74	18	42.0	4.39	T.
Topeka†	66	10	36.2	2.31	2.8
Valparaiso†	64	19	37.0	.....	
Vevay	75	25	47.2	8.90	T.
Vincennes†	74	10	42.3	13.22	
Warsaw†	69	11	39.1	3.74	T.
Washington†	82	21	48.5	9.72	T.
Worthington†	75	23	46.0	10.68	
Indian Territory.					
Eufaula	.....	.....	.....	3.62	
Healdton†	88	20	56.3	4.85	
Kemp†	.....	.....	.....	8.83	
Lehigh†	87	24	55.2	8.13	
Purcell	.....	.....	.....	6.13	
South McAlester	77	20	52.2	8.50	
Tahlequah	80	22	53.0	5.56	
Tulsa†	.....	.....	.....	6.70	
Wagoner	78	19	52.6	3.26	
Iowa.					
Adair	.....	.....	.....	2.03	3.1
Afton	64	— 5	35.2	5.61	7.0
Algona*[1]	54	—12	26.6	2.60	8.0
Alta *a*†	56	—10	27.6	4.08	5.8
Amana†	63	0	33.1	1.48	3.0
Ames *b*	60	— 6	32.2	.....	.....
Ames (near)	.....	.....	.....	2.35	1.5
Atlantic†	60	—14	32.8	3.67	7.5
Atlantic (near)	63	—10	33.8	2.75	5.5
Audubon	60	—12	30.4	3.98	6.0
Belknap	67	0	37.0	2.71	11.0
Belleplaine	65	— 6	31.0	2.73	4.2
Bonaparte†	72	3	36.6	3.53	5.0
Britt	57	—14	26.1	1.52	2.0
Carroll	62	—12	29.7	2.37	0.5
Cedarfalls	60	— 6	30.6	1.15	3.0
Cedar Rapids†	64	— 1	32.7	1.28	4.1
Chariton	66	— 1	36.5	1.11	5.2
Charles City†	68	—10	28.0	1.15	8.0
Clarinda†	66	— 3	37.0	2.14	15.2
Clinton	64	7	34.7	3.72	14.0
College Springs	67	— 9	37.6	1.91	.....
Corning†	66	—10	34.6	3.48	7.0
Council Bluffs	67	— 6	34.5	1.28	2.0
Cresco†	56	—10	25.8	1.07	4.5
Decorah†	61	— 5	27.4	0.70	4.5
Delaware*[3]	56	2	30.0	2.10	2.5
Denison†	62	— 8	31.1	3.14	1.0
Dows	56	—10	28.4	1.38	3.2
Elkader†	61	— 6	30.1	1.59	3.2
Estherville	54	—15	23.7	1.05	6.0

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Iowa—Cont'd.	°	°	°	*Ins.*	*Ins.*
Fairfield†	66	1	35.0	2.66	14.0
Fayette†	64	— 3	31.0	1.75	4.2
Fonda	67	— 8	33.2	3.01	1.0
Forest City	56	—13	24.6	1.48	10.0
Fort Madison*†[1]	68	11	41.5	2.93	7.5
Galva†	60	—10	30.0	3.40	5.2
Gardengrove	66	— 6	34.8	4.97	4.0
Gladbrook	.....	.....	.....	1.70	1.3
Glenwood†	66	6	33.2	1.37	2.8
Grand Meadow*[1]	58	0	28.1	1.56	2.1
Greene	59	— 9	28.8	1.02	.....
Greenfield†	63	— 9	33.2	4.95	8.0
Grinnell†	59	— 3	32.6	1.46	T.
Grundy Center	63	— 8	29.4	0.98	1.5
Hampton	58	— 9	27.7	1.94	5.4
Hawkeye	.....	.....	.....	3.61	4.0
Hopeville†	62	— 6	34.6	3.57	.....
Humboldt†	59	—12	29.2	2.52	.....
Independence†	57	— 5	26.3	1.58	4.2
Indianola†	61	— 4	35.2	1.59	.....
Iowa City *a*†	70	1	35.2	2.07	5.0
Iowa City *b*	67	2	35.8	.....	.....
Iowa Falls†	59	—10	28.6	1.32	.....
Keosauqua	71	4	37.7	2.86	5.5
Knoxville	65	— 2	35.7	1.46	8.0
Lansing	62	— 1	30.6	1.70	5.8
Larchwood	.....	.....	.....	2.71	6.5
Larrabee†	56	—14	28.6	4.32	2.8
Leclaire	.....	.....	.....	2.56	3.2
Lemars	63	— 9	29.1	3.58	4.0
Lenox*[1]	62	0	35.6	3.25	5.3
Logan†	64	— 8	32.7	2.17	2.0
Malvern*[1]	70	—18	33.6	1.70	5.4
Maple Valley	.....	.....	.....	4.76	5.5
Maquoketa	59	6	35.1	2.31	6.5
Marshall†	59	— 5	32.4	1.93	2.0
Millman	.....	.....	.....	2.31	4.5
Monticello*†[1]	58	4	32.5	2.56	3.3
Mooar	65	7	35.2	3.61	.....
Mountayr†	65	— 7	35.7	3.39	12.0
Mount Pleasant*[1]	60	4	36.1	2.34	8.0
Mount Vernon *a*[1]	65	— 1	32.9	1.55	.....
Mount Vernon *b*	63	1	32.4	1.84	6.9
Neola	65	—12	33.0	1.90	1.0
Newton†	62	— 4	33.3	2.33	7.5
North McGregor	.....	.....	.....	2.06	2.0
Northwood	57	—12	25.7	1.51	10.0
Odebolt	.....	.....	.....	3.30	3.8
Ogden	61	—10	32.6	1.64	3.5
Osage*†[3]	.....	—10	25.6	2.54	10.0
Osceola	67	5	34.2	4.68	8.0
Oskaloosa†	69	— 3	35.4	1.53	10.0
Ottumwa	69	0	37.8	2.59	14.5
Ovid†	67	— 6	36.0	3.45	7.1
Plover	66	— 9	28.5	1.45	4.0
Primghar	55	—13	26.4	2.97	1.5
Red Oak	67	—10	36.2	2.44	.....
Rock Rapids	54	—22	24.8	2.86	8.0
Rockwell City	60	— 9	29.0	3.42	4.5
Sac City†	60	— 7	28.4	2.82	3.7
St. Charles	64	— 4	35.2	2.36	8.8
Seymour†	68	0	36.6	2.42	9.0
Sibley	52	—18	25.4	2.90	7.2
Sidney	66	— 4	36.0	2.35	8.8
Sigourney	68	— 2	35.4	1.53	.....
Spencer	55	—13	25.6	1.72	2.2
Spirit Lake†	54	—18	24.0	1.02	7.8
Stuart	59	— 5	33.6	6.16	5.2
Toledo	59	— 5	31.8	1.89	3.5
Villisca†	65	— 5	36.6	2.50	9.5
Vinton*[1]	60	— 2	32.7	2.59	7.5
Washington	70	— 1	34.4	1.42	8.0
Waterloo	60	— 4	31.0	1.54	2.9
Waukee	62	— 5	30.9	2.00	2.0
Waverly	60	— 6	29.4	1.19	18.0
Webster City	58	— 6	30.6	1.42	1.5
Westbend*†[1]	53	— 7	25.8	3.85	2.5
Wilton Junction†	65	4	34.0	3.60	14.0
Winterset†	61	— 6	33.7	1.89	2.2
Kansas.					
Abilene†	79	6	42.7	2.29	7.0
Achilles*[3]	72	— 5	31.6	2.16	15.2
Altoona*†[3]	74	15	44.1	3.45	
Anthony	.....	.....	.....	1.57	
Assaria*[5]	74	6	40.0	1.38	4.1
Atchison†	75	— 1	40.9	1.57	1.5
Augusta	80	11	44.9	1.80	T.
Beloit†	80	15	42.8	1.38	1.8
Blaine	76	0	39.0	2.78	2.0
Burlington†	77	9	48.1	3.09	
Campbell	74	— 4	39.1	3.03	11.0
Colby†	86	— 1	36.4	2.13	12.5
Columbus†	80	14	47.6	4.76	T.
Coolidge†	74	9	38.6	0.25	T.
Cunningham†	86	2	44.9	1.21	0.5
Delphos*[1]	74	10	40.5	0.37	T.

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Kansas—Cont'd.	°	°	°	*Ins.*	*Ins.*
Downs	.....	.....	.....	1.03	4.0
Dresden	74	8	36.8	1.62	11.0
Effingham	72[d]	— 2[c]	40.2[d]	.....	.....
Elgin *[1]	77	13	46.9	3.46	
Ellinwood †	80	9	42.8	0.87	1.5
Emporia *†[1]	73	15	42.0	1.15	T.
Englewood †	88	5	45.4	0.23	T.
Eureka †	.....	.....	.....	2.84	.....
Eureka Ranch †	80	2	39.3	0.35	2.0
Fall River	80	12	47.6	3.60	
Fort Riley †	78	2	43.4	1.80	4.0
Fort Scott †	80	12	45.3	5.47	.....
Frankfort	78	— 3	42.8	4.80	16.0
Garden City †	81	6	41.8	0.19	1.0
Garfield	.....	.....	.....	0.34	0.5
Goodland	68	— 2	35.4	1.85	17.0
Gove *†	76	12	37.2	1.75	7.0
Grainfield *[6]	82	6	40.7	6.00	6.0
Grenola *[1]	75	12	45.1	3.53	.....
Halstead	76	10	41.6	3.20	1.0
Horton	73	— 1	40.4	1.97	3.5
Hutchinson †	84[c]	11[c]	47.8[c]	1.08	2.0
Independence †	79	14	48.2	3.44	
Lakin †	80	13	46.5	0.10	1.0
Lawrence	77	4	42.2	2.88	.....
Lebo †	75	9	43.6	3.14	T.
Manhattan *b*	80	0	42.2	2.19	5.2
Manhattan *c*	79	1	43.0	2.21	7.0
Marion †	76	8	45.8	3.10	2.0
Meade †	90	12	47.9	T.	
Medicine Lodge †	84	9	45.6	1.30	T.
Minneapolis †	79	8	40.8	1.04	3.4
Morantown †	76	10	45.2	3.97	T.
Morton †	76	10	43.4	0.10	1.0
Mounthope	77	12	45.0	3.46	.....
Norton	74	2	38.8	2.92	21.0
Norwich †	83	10	45.6	1.65	
Oberlin †	.....	.....	.....	3.30	21.0
Olathe †	78	4	44.6	3.30	T.
Osage City †	75	7	43.4	2.93	1.0
Oswego	81	15	50.2	4.47	
Ottawa	79	8	44.1	3.75	T.
Paola †	72	7	42.6	2.35	
Phillipsburg	80[i]	14[i]	38.4[i]	1.70	10.0
Pleasant Dale	80	12	41.0	0.45	0.1
Powhattan	71	— 1	39.2	2.28	3.5
Pratt	80	9	41.1	1.00	1.0
Rome *†	81	13	46.6	3.47	
Salina †	81	6	43.0	1.60	6.2
Sedan †	76	13	47.3	4.07	
Seneca	72	— 5	39.0	3.16	10.0
Sharon Springs *[1]	76	10	39.5	1.50	10.0
Ulysses †	76	13	41.6	0.18	1.5
Wallace *[1]	69	10	40.0	0.81	7.5
Wamego *[1]	72	0	40.0	2.71	8.0
Wellington *[1]	78	15	47.9	2.28	T.
Winona *[b]	82	6	40.9	1.25	7.5
Yates Center	78	17	45.2	2.69	T.
Kentucky.					
Alpha †	80	29	52.8	7.56	0.1
Ashland *[1]	77	25	49.8	.....	T.
Bardstown †	75[f]	27[f]	47.6[f]	8.17	
Blandville †	77	28	49.1	8.61	0.8
Bowling Green *a* *[1]	79	26	49.9	7.18	0.5
Bowling Green *b* †	80	29	50.7	7.61	T.
Burnside †	.....	.....	.....	7.04	0.1
Caddo †	74	24	46.4	6.25	T.
Canton *†[1]	78	31	52.9	8.65	T.
Carlisle	75	22	46.0	5.47	T.
Carrollton †	77	27	47.8	6.47	T.
Catlettsburg *†[1]	72	24	48.5	4.61	1.0
Earlington	81	30	51.6	12.57	1.0
Edmonton †	79	25	51.6	8.10	0.1
Ensor	80	28	50.0	10.75	T.
Eubank †	84	20	49.6	6.69	
Falmouth †	.....	.....	.....	6.08	T.
Fords Ferry †	80[c]	30[c]	49.6[c]	10.82	T.
Frankfort †	76	23	48.8	6.29	
Franklin †	77	29	50.9	8.01	0.5
Georgetown	76	23	49.2	.....	
Greensburg †	86	24	50.1	8.22	0.2
Henderson †	79	29	50.4	11.64	
Hopkinsville †	81	29	51.7	7.37	1.0
Leitchfield †	78	22	47.8	9.62	T.
Louisa † *a*	.....	.....	.....	4.14	0.2
Lyndon	78	24	47.6	8.26	
Marrowbone †	81	22	51.2	8.58	T.
Maysville	75	25	47.8	5.77	T.
Middlesboro †	83	21	50.4	9.80	T.
Mount Sterling †	74	20[c]	46.1	6.79	T.
Munfordville *[1]	78	30	52.4	8.01	
Owensboro †	81	28	47.8	9.36	
Owenton †	73	23	46.7	8.39	T.
Paducah *a* †	.....	.....	.....	8.65	0.5
Paducah *b* †	82	31	51.6	9.38	1.0
Pilot Oak	85	30	55.4	.....	T.
Kentucky—Cont'd.					
Pleasure Ridge Park †	79	24	47.9	8.41	T.
Princeton	83	29	50.1	10.60	0.5
Richmond †	80	23	48.9	5.99	T.
Russellville †	83	26	52.0	9.53	1.0
St. John †	78	24	48.8	8.92	T.
Sandyhook	.....	.....	.....	4.04	
Shelbyville †	79	23	47.9	7.51	T.
South Fork [5]	.....	.....	48.6	8.46	
Vanceburg †	72	24	44.4	5.33	
Williamsburg †	82	23	52.8	9.83	0.5
Louisiana.					
Abbeville	86	40	69.0	5.65	
Alexandria †	86	34	65.3	4.64	
Amite †	89	36	68.6	4.26	
Bastrop †	87	33	64.0	7.72	
Baton Rouge †	86	38	69.2	5.78	
Calhoun	85	34	63.0	6.22	
Cameron †	.....	.....	.....	5.82	
Cheneyville †	85	35	66.4	5.45	
Clinton †	81	39	67.0	6.45	
Davis	85	30	62.4	4.18	
Donaldsonville †	92	39	69.9	6.96	
Elm Hall	83	38	66.8	6.67	
Emilie †	84	39	67.4	4.72	
Farmerville	83[c]	34[i]	60.5[b]	7.81	
Franklin †	84	39	69.7	4.84	
Grand Coteau	84	42	68.4	4.55	
Hammond	86	36	68.0	5.55	
Houma	87	32	69.6	1.48	
Jeanerette	83	40	70.6	5.10	
Lafayette †	84	35	68.8	6.31	
Lake Charles †	83	38	66.0	5.52	
Lake Providence	84[b]	42[b]	61.6[b]	7.54	
Lawrence	84	43	67.9	3.50	
Liberty Hill	89	29	63.6	6.81	
Mansfield †	86	30	63.1	4.40	
Melville	84	41	67.3	3.55	
Minden	87	33	60.2	6.48	
Monroe †	83	41	62.0	4.33	
Montgomery [k]	87	32	63.1	.....	
New Iberia	81	42	69.3	6.50	
Oakridge †	90	35	63.0	5.62	
Oberlin	87	34	62.6	5.40	
Opelousas †	85	35	67.0	5.50	
Oxford †	85	30	62.6	5.82	
Paincourtville †	87	40	69.8	7.63	
Plain Dealing †	84	32	62.3	6.71	
Rayne	88	36	67.6	.....	
Robeline	87	29	62.8	2.29	
Ruston	84	36	63.2	7.11	
Schriever	87	34	69.6	3.96	
Shellbeach	80	42	67.2	5.36	
Southern University †	83	40	66.5	4.85	
Sugar Ex. Station †	83	48	69.4	6.73	
Sugartown † [e]	82	39	65.0	5.88	
Thibodeaux	.....	.....	.....	4.58	
Venice †	81	46	66.4	5.61	
Wallace	85	42	68.2	6.09	
Whitehall	88	34	68.6	5.47	
White Sulphur Springs	87	36	65.9	4.80	
Maine.					
Bar Harbor	65	— 4	32.3	3.54	21.0
Belfast *[6]	46	— 2	29.7	4.65	20.0
Cornish *[1]	53	— 8	30.0	2.96	22.8
Fairfield	48	—21	28.2	2.63	13.0
Flagstaff †	46	—17	23.9	3.02	24.0
Fort Fairfield	43	—28	19.3[c]	2.60	26.0
Gardiner	52	— 7	30.8	4.30	17.5
Kineo †	48	—16	24.0	2.43	15.0
Lewiston	51	—10	30.4	4.19	22.2
North Bridgton	50	— 8	28.9	4.74	27.0
Orono	48	—11	27.3	3.96	6.5
Maryland.					
Annapolis	68	.....	.....	2.46	
Boettcherville [2]	.....	.....	38.0	2.80	3.0
Charlotte Hall †	80	26	47.0	2.52	
Cherryfields † [3]	.....	.....	45.2	5.05	
Chestertown †	72	20	43.1	2.97	
Collegepark	78[c]	23[c]	44.0[c]	2.91	
Cumberland *a*	71	22	43.0	2.86	1.0
Cumberland *b*	74	25	46.4	2.94	2.5
Darlington †	69	22	43.0	3.23	
Deerpark	.....	12	.....	3.48	3.0
Easton †	75	21	44.6	2.12	
Ellicott City	70	30	44.8	2.49	
Fallston *[1]	68	24	42.4	2.53	
Flintstone	73	17	42.5	3.34	3.0
Frederick	72	26	44.6	2.72	
Grantsville	71	14	40.5	3.52	7.0
Greatfalls *[5]	75	29	45.6	2.71	
Greenspring Furnace	72	22	43.4	2.94	0.5
Hagerstown †	71	25	45.1	3.17	1.0
Jewell †	80	27	46.6	3.00	T.
Johns Hopkins Hospital	72	20	44.4	2.38	.....
Laurel	80	22	44.4	3.08	T.
McDonogh *	72	25	44.4	.....	
Maryland—Cont'd.					
Mardela Springs † [1]	76*	22	46.3	3.73	T.
Mount St. Marys Coll. †	70	23	42.6	3.04	0.2
New Market	76	23	44.0	3.28	T.
Pocomoke City	78	27	50.9	3.46	
Princess Anne	76	23	45.7	3.17	T.
Sharpsburg	73	24	43.6	2.40	0.5
Solomons †	75	29	46.3	3.14	
Sunnyside	69	15	40.6	4.69	7.2
Taneytown †	76	22	44.4	2.49	0.9
Van Bibber	69	24	41.8	2.31	
Western Port	74	21	42.6	2.22	3.8
Westminster	78	24	44.4	2.58	T.
Woodstock	72	20	43.8	2.74	
Massachusetts.					
Bluehill (summit)	55	1	34.2	2.94	5.0
Cambridge *a*	57	3	36.2	2.92	.....
Concord †	58	1	34.3	3.75	5.4
Fallriver *[1]	62	7	37.0	3.18	1.5
Fitchburg *b*	58	— 4	33.4	3.83	5.8
Framingham	62	3	37.2	3.43	.....
Groton	56	— 4	32.3	3.98	5.5
Hyannis *† [1]	56	16	39.4	3.01	T.
Lawrence	58	0	34.3	3.75	11.5
Leeds	58	— 6	32.8	3.48	2.5
Leicester Hill	57	4	32.2	3.14	2.5
Lowell *a*	55	1	34.1	4.15	.....
Middleboro	57	5	35.5	2.29	1.1
Monson	63	— 2	36.0	3.46	7.0
New Bedford *a*	56	7	36.0	2.79	2.5
Pittsfield	55	— 3	31.0	3.16	8.0
Springfield Armory	58	— 1	32.2	3.07	5.0
Taunton *b*	55	4	35.6	2.91	2.0
Wakefield	56	1	35.1	3.63	3.5
Waltham	.....	.....	.....	3.44	.....
Westboro †	61	— 2	35.6	3.91	4.5
Worcester *b*	57	3	35.0	4.09	5.0
Michigan.					
Adrian	64	13	34.7	2.98	4.0
Allegan	70	10	33.5	3.30	7.0
Alma	55	— 4	29.6	4.09	9.0
Ann Arbor	61	11	34.0	3.40	10.2
Arbela	56	4	30.5	3.15	6.0
Baldwin	67	—22	27.2	1.94	11.3
Ball Mountain	57	6	31.4	3.77	7.5
Baraga	52	—21	21.8	2.67	24.4
Battlecreek	68	12	34.7	3.31	3.2
Bay City *b*	.....	.....	.....	4.26	14.0
Benton Harbor	67	15	35.1	2.68	4.0
Benzonia	68	— 3	29.2	0.85	3.5
Berlin	58	3	30.9	3.96	11.3
Berrien Springs	67	14	35.4	3.82	8.0
Big Rapids	60	—10	28.1	3.65	16.2
Birmingham	58	10	33.0	2.35	7.0
Boon	46[c]	—12[b]	23.7[c]	3.32	19.1
Bronson	67	14	35.5	2.71	5.2
Calumet	47	— 2	22.9	1.39	12.0
Carsonville	50	5	29.2	2.44	8.0
Charlevoix	57	—13	24.4	1.62	13.0
Cheboygan	49	— 9	25.6	1.47	11.0
Clinton	67	12	35.0	3.53	11.0
East Tawas	52	2	27.9	3.31	17.0
Eloise	59	12	33.8	3.38	5.5
Escanaba †	51	—18	23.4	2.74	12.0
Fairview	59	11	31.9	2.99	13.0
Fitchburg	62	9	32.4	4.03	15.0
Flint	59	2	30.0	2.10	2.0
Gladwin	53	—10	27.4	2.41	17.0
Grand Rapids *b*	64	5	31.3	4.69	12.0
Grape	64	12	36.4	2.26	4.8
Grayling	50	—20	24.0	2.70	22.0
Hanover	65	8	33.7	2.06	7.9
Harrison	57	—12	26.2	3.38	17.5
Harrisville	52	0	27.4	4.14	24.8
Hart	68	— 3	30.8	2.48	8.2
Hastings	63	7	32.4	3.30	12.0
Hayes	49	5	30.4	2.80	9.0
Highland Station	60	6	32.6	4.35	7.5
Holland *[6]	66	4	35.3	.....	.....
Howell	62	9	31.5	3.13	4.0
Humboldt	51	—35	17.8	1.17	10.0
Ionia	62	2	31.6	2.78	5.5
Iron River	55	—28	18.5	1.65	14.5
Ivan	50	— 6	26.0	2.78	18.0
Jackson	67	13	34.6	2.67	.....
Jeddo	50	5	30.0	2.78	7.2
Kalamazoo	69	12	34.1	3.10	5.0
Lake City	55	—17	25.4	2.80	18.0
Lansing	65	7	31.9	3.54	8.5
Lapeer	60	5	31.1	2.78	5.8
Lathrop	49	—21	20.7	2.05	18.5
Ludington	65	2	30.0	1.32	9.1
Luzerne	53	—20	22.9	3.12	19.0
Mackinaw City	42	—14	22.4	2.23	16.0
Madison	62	14	34.8	3.04	4.1
Mancelona	56	—19	25.6	3.06	21.7
Manistee	67	— 8	29.4	0.60	4.0

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Michigan—Cont'd.	°	°	°	*Ins.*	*Ins.*
Manistique	44	−13	22.9	2.48	16.0
Middle Island *[10]	48	8	30.4	.....	.....
Midland	46	4	28.1	2.66	10.0
Mottville	70	10	36.5	3.11	2.7
Mount Clemens	60	9	33.4	2.71	4.8
Mount Pleasant *b*	54	− 2	28.9	3.05	14.2
Muskegon	64	−11	30.5	2.45	9.0
Newberry	55	−20	20.3	2.60	19.0
North Manitou Island *[10]	48	7	27.6	.....	.....
North Marshall	66	8	35.0	3.31	.....
Northport	50	− 2	28.5	1.60	20.0
Old Mission	53	− 1	27.6	3.55	11.0
Olivet	64	10	33.4	3.00	8.5
Omer	53	3	27.3	3.50	18.0
Ovid	59	3	31.2	3.24	11.0
Owosso	60	3	30.8	3.64	.... .
Parkville	.....	.....	.....	3.84	8.0
Petoskey	55	− 9	26.0	3.05	22.0
Plymouth	61	11	34.0	3.24	6.0
Pontiac	58	7	32.7	.....	.....
Port Austin	48	3	28.9	3.16	13.0
Powers	54	−12	23.8	2.27	.....
Reed City	59	−14	26.8	1.83	11.5
Rockland	64	− 8	23.6	1.50	6.0
Rogers City	50	−13	24.2	2.64	15.2
Romeo	60	8	30.2	2.85	7.0
Saginaw	56	4	30.6	3.31	.....
St. Ignace	49	−12	18.4	2.80	14.0
St. Johns	61	4	31.6	4.27	11.0
Sandbeach *b*	48	6	29.0	.....	.....
Sidnaw	52	−21	20.4	0.93	12.0
Somerset	63	10	33.2	4.02	12.5
South Haven	66°	13	33.7°	2.48	4.5
Stanton	56	− 3	28.3	4.40	18.0
Thomaston	63	−26	18.9	2.41	20.2
Thornville	58	5	32.6	3.89	11.6
Thunder Bay Island *[10]	48	8	29.2	.....	.....
Traverse City	56	−12	27.6	2.12	12.0
Valley Center	53	5	30.5	2.63	9.0
Vandalia	68	12	35.9	4.21	13.2
Wasepi	67	14	34.8	3.42	3.0
Waverly	67	− 1	31.9	3.53	6.5
West Harrisville	47	− 5	25.0	3.64	19.3
Wetmore	54	−21	20.9	2.44	25.0
Ypsilanti	59	9	34.5	3.68	8.0
Minnesota.					
Adat	52	−37	13.7	.....	.....
Albert Lea †	54	−10	24.6	2.70	12.0
Alexandria †	47	−33	15.4	1.51	11.5
Beardsley †	48	−35	15.9	1.13	7.6
Belleplaine *[1]	49	−12	28.7	2.62	1.7
Bermidji	57	−40	14.6	1.40	5.0
Bingham Lake	52	−25	22.0	.....	.....
Bird Island	53	−25	20.2	2.04	14.5
Blooming Prairie †	57	−17	24.6	1.75	9.0
Bonniwell	59	−19	21.4	2.52	.....
Caledonia †	60	− 1	26.6	1.80	7.2
Camden	52	−20	21.2	1.22	10.5
Campbell	56	−35	15.2	3.90	33.0
Collegeville	53	−12	22.6	2.50	18.0
Crookston †	49	−35	13.6	0.94	7.8
Dawson *[1]	50	−11	22.8	2.41	11.0
Detroit City	59	−43	17.1	1.44	.....
Faribault	58	−16	24.2	2.05	18.0
Farmington †	60	−30	30.9	3.32	16.0
Fergus Falls †	53	−31	18.2	1.46	7.9
Glencoe †	56	−24	17.4	2.36	.....
Glenwood †	52	−32	19.1	1.51	6.0
Grand Meadow *† [1]	59	−15	23.6	0.75	3.9
Grand Portage	42	−13	19.0	.....	.....
Koochiching	58	−36	14.4	2.55	.....
Lake City	62	−12	25.2	2.30	14.5
Lakeside †	51	−27	20.0	1.97	8.8
Lake Winnibigoshish [1]	54*	−33	17.9	1.58	8.4
Lambert †	50	−34	14.2	1.01	8.0
Leech Lake [1]	65*	−48	17.8	1.60	9.3
Lesueur *[1]	62	−20	24.5	3.55	15.5
Long Prairie †	55	−30	19.7	1.61	10.0
Lutsen	47	−12	20.4	2.51	.... .
Luverne †	55	−19	23.8	1.73	7.0
Mapleplain	55	−16	22.0	4.22	22.6
Mazeppa [1]	52*	− 6	25.8	2.40	20.0
Milaca	.....	.....	.....	1.85	13.5
Milan †	52	−32	17.0	1.79	17.5
Minneapolis *a* †.	60	−12	23.5	3.23	14.1
Minneapolis *b* [1]	60*	−13	23.4	3.11	14.8
Minnesota City *† [1]	64	− 2	28.9	1.71	7.5
Montevideo †	48	−25	17.8	2.28	12.0
Morris	49	−28	17.4	2.50	17.0
Mount Iron	.....	.....	.....	0.70	7.0
New London	48	−25	16.4	2.70	17.0
New Richland *[14]	54	− 8	24.9	.....	.....
New Ulm †	56	−20	23.1	2.39	14.0
Park Rapids †	55	−37	17.4	1.10	6.0
Pine River [1]	52*	−40	20.3	2.17	10.8
Pleasant Mounds †	57	−30	23.6	1.87	5.2

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Minnesota—Cont'd.	°	°	°	*Ins.*	*Ins.*
Pokegama Falls [1]	55*	−49	17.8	2.15	8.5
Redwing	.....	.....	.....	2.50	1.5
Reeds	.....	.....	.....	2.61	12.0
Rolling Green	52	−15	22.6	1.75	10.0
Roseau [7]	52	−30	11.4	1.16	4.3
St. Charles †	61	−12	24.6	2.13	13.5
St. Cloud	54	−18	19.4	4.53	15.5
St. Olaf	56	−25	18.4	1.58	13.2
St. Peter	.....	.....	.....	2.50	15.0
Sandy Lake Dam [1]	48*	−39	20.2	2.18	8.4
Sauk Center	54	−35	19.8	2.75	19.0
Shakopee [6]	66*	−13	22.4	2.75	15.0
Tower †	54	−35	14.6	1.50	13.0
Two Harbors †	43	−13	24.3	2.32	11.0
Wabasha *[1]	68	− 5	26.4	1.87	14.0
Willmar †	53	−26	19.3	1.57	11.2
Worthington	50	−16	21.8	1.59	7.2
Zumbrota [1]	60*	−18	25.6	.....	.....
Mississippi.					
Agricultural College	81	39	58.9	6.76	
Austin †	82	36	57.4	11.19	
Batesville †	79	34	56.0	12.02	
Bay St. Louis	83	43	68.0	.....	
Biloxi †	80	42	67.8	12.64	
Briers †	82	40	64.1	12.68	
Brookhaven †	88	35	65.6	5.85	
Canton †	85	40	63.9	5.66	
Columbus *a* †	.....	.....	.....	8.65	
Columbus *b*	86	31	59.9	.....	
Crystal Springs †	88	38	64.3	5.21	
Edwards	86	40	64.6	3.90	
Enterprise	88	34	65.2	6.76	
Fayette †	86	36	64.3	6.86	
French Camps †	82	31	60.2	7.03	
Fulton †	80	32	58.0	19.12	
Greenville *a*	82	38	59.0	11.37	
Greenville *b* †	86	36	60.5	11.48	
Hattiesburg †	87	40	67.9	3.70	
Hernando	77	33	55.6	.....	
Holly Springs	78	30	52.2	16.35	
Jackson †	88	39	64.2	5.62	
Kosciusko	82	33	61.8	5.18	
Lake	83	33	61.1	5.78	
Leakesville †	88	37	67.9	8.80	
Logtown †	85	44	68.9	15.84	
Louisville †	83	33	61.4	6.20	
Macon †	85	36	60.6	5.31	
Magnolia †	86	37	67.2	7.93	
Mayersville	84°	39°	62.2°	6.50	
Meridian †	86	36	63.2	6.08	
Mosspoint	83	35	67.4	15.35	
Natchez †	86	36	66.8	7.65	
Palo Alto †	81	37	59.5	11.46	
Pontotoc	83	27	57.4	16.73	
Poplarville	80	40	66.9	.....	
Port Gibson †	88	35	65.4	4.36	
Stonington *[1]	86	44	65.3	.....	
Thornton †	85	44	62.0	4.20	
Topton *[5]	82	44	64.8	6.00	
Water Valley *† [1]	79	34	57.2	15.50	
Waynesboro *b*	86	24	62.6	7.01	
Woodville †	83	40	66.1	4.93	
Yazoo City †	91	32	62.8	5.14	
Missouri.					
Akron	.. ..	.....	.....	4.07	9.5
Appleton City	79	12	46.1	3.24	T.
Arlington †	.....	.....	.....	5.96	
Arthur *† [2]	.....	14	44.3	4.65	T.
Avalon	71	1	40.9	3.27	0.5
Bagnell †	.....	.....	.....	7.82	
Bethany	65	19	39.8	3.13	T.
Birchtree	79	18	48.2	11.69	
Bolckow †	.....	.....	.....	1.75	7.0
Boonville †	.....	.....	.....	4.36	1.0
Brunswick	72	6	39.1	3.45	0.8
Carrollton †	70	8	43.2	3.21	
Conception	65	0	38.7	1.79	3.8
Cowgill *[5]	66	2	39.2	3.04	T.
Darksville †	68	7	40.5	7.15	0.5
East Lynne *[3]	.....	8	41.4	4.07	T.
Edgehill *[5]	74	20	46.8	10.37	0.2
Eightmile *[1]	72	10	42.9	4.42	T.
Elmira	79	0	42.0	1.84	0.4
Emma *[3]	.....	8	41.4	2.66	0.1
Fairport	.....	.....	.....	2.74	4.0
Farmersville	.....	.....	.....	2.65	2.5
Fayette	74	8	43.4	5.57	0.5
Fulton	.....	.....	.....	6.34	T.
Gallatin *[1]	68	0	39.6	3.57	0.8
Glasgow	72	7	43.0	5.40	
Gordonville *[3]	.....	27	46.4	15.23	0.8
Gorin	.....	.....	.....	2.63	T.
Grovedale	76	15	46.2	9.21	0.8
Halfway	77	14	46.1	6.52	T.
Harrisonville †	77	8	42.6	3.24	T.
Hastain	75	16	46.4	6.45	T.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Missouri—Cont'd.	°	°	°	*Ins.*	*Ins.*
Hermann †	.....	.....	.....	7.15	
Houston	78	34	49.6	10.88	T.
Houstonia	.....	.....	.....	3.10	0.2
Humansville	79	13	47.0	6.28	T.
Irena	.....	.....	.....	4.71	9.0
Ironton †	79	21	47.7	10.18	T.
Jefferson City †	76	15	45.0	7.00	
Kidder	72	0	39.8	2.74	1.3
Lamar †	78	15	47.0	4.84	
Lamonte	.....	.....	.....	3.18	T.
Lebanon	78	15	47.4	10.04	
Lexington †	74	7	43.2	2.71	T.
Liberty	75	4	42.6	2.88	0.5
McCune *† [1]	76	13	42.0	5.08	0.8
Macomb	.....	.....	.....	7.61	T.
Mansfield	.....	.....	.....	8.25	
Marblehill	77	25	47.2	12.63	
Marshall †	73	7	42.3	3.74	0.2
Maryville	67	1	35.4	1.51	5.2
Mexico †	74	11	41.8	7.13	0.2
Mine La Motte †	76	22	48.2	10.42	1.0
Mineralspring	76	14	49.2	7.01	T.
Montreal *[1]	75	16	44.8	10.94	0.5
Mount Vernon	82	16	50.3	8.56	
Neosho	93	22	51.6	5.65	T.
Nevada *[1]	75	16	47.0	3.64	T.
New Haven *[1]	72	20	46.3	7.15	
New Madrid	.....	.....	.....	14.52	
New Palestine *† [1]	71	15	45.3	5.42	T.
Oakfield	75	19	46.0	9.27	T.
Oakmound	.....	.....	.....	9.57	
Oakridge *[4]	.....	26	45.7	12.71	2.0
Olden †	77	17	47.2	9.86	
Oregon *a*	78	− 2	40.6	2.07	5.6
Oregon *b* *[1]	68	− 4	38.3	2.27	6.0
Osceola †	.....	.....	.....	5.66	
Oto	.....	.....	.....	5.20	T.
Palmyra *[3]	72	14	41.2	5.20	6.0
Phillipsburg *† [1]	76	13	46.2	7.70	T.
Pickering *[3]	70	− 5	38.8	2.04	7.5
Platte River *[3]	76	− 2	37.6	2.25	1.0
Poplar Bluff	77	27	52.7	11.25	
Potosi	68	12	40.0	9.73	1.0
Princeton	69	0	38.4	5.43	2.0
Rhineland	74	17	45.4	6.97	T.
Richmond	72	6	41.3	2.18	T.
Rolla	.....	.....	.....	8.77	1.1
St. Charles	76	17	44.6	10.67	T.
St. James *[3]	.....	16	43.7	.....	1.5
St. Joseph †	.....	.....	.....	1.91	2.0
St. Louis	77	20	44.8	8.42	T.
Sarcoxie *[3]	78	16	45.4	7.13	
Sedalia	72	9	44.4	3.83	
Seymour *[1]	78	12	44.5	7.19	T.
Shelbina	.....	.....	.....	5.30	
Sikeston	76	30	52.0	10.02	
Steffenville	.....	.....	.....	5.81	1.0
Stellada †	75	9	44.6	5.10	0.5
Subiett	70	0	38.4	7.10	2.0
Trenton	66	2	39.6	3.00	1.0
Virgil City	.....	.....	.....	5.62	T.
Warrenton	75	15	42.3	8.98	0.5
Wheatland	.....	.....	.....	5.73	T.
Willow Springs	80	17	49.2	11.59	
Zeitonia *[1]	81	28	48.6	8.61	
Montana.					
Augusta †	61	−25	21.5	0.30	3.0
Bigtimber †	50	−20	20.0	0.25	2.5
Boulder [4]	57	−23	21.3	.....	.....
Bozeman †	62	−16	23.9	1.10	11.0
Bozeman Exper. Stat'n.	57	−12	22.6	0.73	7.3
Butte †	52	−15	21.7	1.04	10.3
Castle	53	−18	21.4	0.51	5.1
Chinook †	50	−36	13.6	0.40	4.0
Choteau †	62	−23	21.0	1.30	13.0
Columbia Falls	49	−11	24.4	1.62	16.2
Deer Lodge	52	−21	19.2	0.77	7.7
Ekalaka	54	−27	19.4	1.10	7.7
Fort Benton	70	−35	22.4	0.30	3.0
Fort Custer †	55	−24	23.8	1.72	17.2
Fort Keogh †	55	−36	14.7	1.87	18.6
Fort Logan †	63	−38	20.4	0.74	7.4
Fort Missoula	53	− 6	28.0	0.42	2.8
Glendive †	54	−28	13.2	2.50	10.0
Greatfalls †	68	−22	27.8	1.05	10.4
Hogan †	56	−25	17.6	0.70	7.0
Kalispell	52	−10	24.9	0.34	3.0
Kipp †	54	−32	17.8	0.70	6.0
Libby †	60	− 8	30.9	2.03	12.0
Livingston †	61	−12	26.4	0.49	4.9
Manhattan † [8]	61	−14	25.0	T.	T.
Martinsdale †	56	−23	22.9	0.80	6.0
Marysville †	54	−16	19.9	0.98	9.8
Monarch	58	−26	20.8	0.80	8.0
Poplar †	52	−34	10.1	1.60	10.0
Radersburg	75	−32	20.4	0.40	4.0

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Montana—Cont'd.	°	°	°	*Ins.*	*Ins.*
St. Ignatius Mission†	70	— 3	30.9	0.83	8.1
St. Pauls†	50	—26	20.5	2.50	25.0
Sun River	58	—31	30.8	0.20	2.0
Troy	61	1	31.2	2.73	6.5
Utica†	53	—25	20.4	0.71	7.1
Virginia City†	55	—15	22.2	2.35	25.5
Wibaux†				1.08	6.0
Yale†	62	—26	21.7	1.45	14.5
Nebraska.					
Agee*[1]	61	— 3	28.6	1.34	0.5
Alliance*[1]	63	— 4	28.4	1.21	6.0
Ansley†	72	— 5	34.2	1.46	3.0
Arapaho*[1]	70	— 8	34.2	0.86	0.2
Arborville*[1]	66	— 4	33.8	2.61	6.5
Arcadia	72	6	35.9	2.50	2.0
Ashland *a*†	66	— 7	35.0	1.23	3.5
Ashland *b**[1]	72	— 3	34.7	1.68	2.1
Ashton	69	— 3	34.0	1.48	6.5
Auburn*†	70	— 9	38.9	2.17	8.0
Aurora*[1]	78	7	35.6	2.31	4.0
Bassett	63[e]	—12[e]	27.1[e]	2.35	1.5
Beatrice†	72	— 6	36.0	4.20	6.0
Beaver City†	78	3	39.6	1.30	5.5
Bluehill*[1]	70	5	38.0	0.88	1.5
Brokenbow*[1]	70	0	35.6	1.60	1.0
Burchard				2.85	11.0
Burwell				1.60	0.5
Callaway†	69	5	33.8	1.28	3.0
Central City*[5]	75	9	38.4	1.40	2.0
Chester*[1]	74	3	37.6	0.78	0.5
Columbus†	65	— 1	33.1	1.90	4.0
Creighton†	59	— 9	28.6	2.58	
Crete	71	— 6	36.4	3.07	4.0
Culbertson				1.90	12.5
Curtis *a*	76	5	40.8	2.58	13.0
David City*†[5]	62	1	33.6	1.75	7.0
Divide				1.12	1.5
Dunning*[1]	54	4	33.6	0.26	2.0
Edgar*[5]	66	8	36.6	1.08	4.0
Elba				1.58	11.0
Ericson*†[1]	72	3	32.1	2.64	T.
Ewing†				1.93	1.8
Fairbury†	77	— 5	38.3	1.15	2.0
Fairmont†	72	5	37.8	2.68	4.3
Filley				2.14	7.0
Fort Robinson	70	—14	31.2	0.50	5.0
Franklin†	81	3	38.8	0.61	6.0
Fremont†	65	2	33.4	1.90	3.5
Geneva†	76	— 3	36.2	1.61	3.5
Genoa	62	— 5	33.0	1.81	5.5
Gering†	76	— 5	34.0	1.08	4.9
Gothenburg	71	3	36.4	1.06	4.0
Grand Island *a*[1]	81	8	39.0	2.25	12.8
Grand Island *b*	73	— 3	37.2	2.54	13.2
Greeley*[1]	72	3	32.6	0.31	3.1
Haigler				0.70	7.0
Hartington†	58	—11	26.6	3.01	2.0
Harvard*[1]	69	4	34.3	1.86	6.0
Hastings*[1]	69	8	35.5	1.58	7.5
Hayes Center				1.86	13.0
Hay Springs	67	—13	31.4	2.68	4.1
Hebron†	77	— 2	38.2	1.33	1.8
Hickman				1.40	2.5
Holdrege *b*[1]	72	8	37.4	2.30	14.0
Imperial *a*†	71	— 2	36.1	2.05	18.0
Indianola (near)*[1]	69	9	35.9	1.10	7.5
Kearney*[5]	70	8	36.0	1.08	9.8
Kennedy	68	— 3	31.6	1.63	0.2
Kimball†	68	— 5	32.9	1.70	17.0
Kirkwood*†	61	— 5	24.8	0.99	0.5
Lexington†	74	2	36.1	1.59	
Lincoln *b*†	70	— 3	36.3	1.39	1.0
Lincoln *d*	69	7	35.5	1.51	0.6
Lodgepole†	79	— 2	34.8	2.25	5.0
Loup *a*[1]	68	5	34.8	0.72	
Loup *b*[1]	70	0	34.3	1.32	3.0
Lynch*†	62	— 6	29.1	1.73	1.2
Lyons				1.31	0.2
McCook*[1]	82	10	36.8	0.85	8.5
McCool				3.12	
Madison*[1]	60	— 6	28.9	1.53	0.5
Madrid*[5]	70	5	34.6	1.36	7.2
Marquette				1.93	3.5
Milford*[5]	69	3	31.0	4.25	9.0
Minden *a*[1]	71	6	35.3	1.93	10.1
Minden *b*				1.56	
Nebraska City *a*	70[b]	— 6[d]	33.5[c]	1.85	7.0
Nebraska City *b*[1]	70	— 7	38.0	1.75	7.0
Nemaha*[1]	68	— 8	35.6		
Nesbit	64	— 3	34.0	0.47	1.0
Norfolk†	59	— 2	27.1	1.55	0.4
Norman	72	— 2	36.2	0.99	3.7
North Loup†	66	— 7	34.3	1.42	
Oakdale†	60	— 8	29.8	1.78	1.1
Odell*[5]	70	12	40.2	2.36	4.0
O'Neill†	65	— 6	28.5	1.69	0.8
Nebraska—Cont'd.					
Ord				1.57	
Osceola				2.37	
Ough†				2.19	15.5
Palmer *b*				3.17	4.0
Plattsmouth *a*†				1.85	5.5
Ravenna *a*	72	— 4	35.4	1.61	7.1
Ravenna *b**[1]	70	10	37.5	1.78	11.0
Redcloud *a*				0.93	
Redcloud *b**[1]	76	10	37.6	1.73	7.2
Republican*[1]	78	11	37.0	0.70	1.0
Rulo*[1]	68	4	41.7	2.50	6.0
St. Libory	70	2	35.4	1.87	8.0
St. Paul	68	6	37.0	1.89	8.5
Salem*[1]	70	2	41.3	2.41	6.0
Santee Agency†	60	— 8	28.0	1.33	1.8
Sargent				0.97	
Schuyler				1.21	1.0
Seneca*[1]	70	3	34.6	1.59	1.0
Seward*[1]	64	3	35.6	3.34	T.
Springfield*[1]	67	— 6	34.1	1.57	2.4
Springview		— 8		0.50	0.0
Stanton*[1]	59	— 1	31.3	1.52	T.
State Farm	70	2	36.8	1.58	
Strang*[1]	70	3	37.4	1.63	6.0
Stratton				2.22	
Stromsburg				1.45	5.0
Superior*[5]	72	8	38.5	1.30	0.5
Sutton				3.18	5.6
Syracuse				1.15	T.
Tecumseh *b*†	72	6	38.6	2.23	7.0
Tekamah	65	— 6	34.4	1.23	2.5
Thedford*[1]	68	— 8	34.9	0.66	0.6
Turlington†	67	—10	35.2	1.49	5.0
Valentine†	67	— 5	31.1	1.50	
Wakefield				1.73	1.2
Wallace*[1]	69	5	31.1	1.35	9.0
Weeping Water*[1]	65	—10	32.7	1.09	5.5
Westpoint†	76	2	35.9	2.24	
Whitman				1.05	0.5
Wilber*[1]	70	2	37.5	1.52	1.0
Willard				0.45	
Wisner				3.25	
Woodlawn				1.39	
York*[1]	60	0	35.1	2.80	
Nevada.					
Austin	55	6	27.6	1.79	17.3
Battle Mountain*[1]	65	11	31.7	0.54	6.1
Beowawe*[1]	64	12	31.5	0.49	5.5
Candelaria	79	11	35.1	0.61	8.5
Carlin*[1]	53	—10	26.4	1.18	13.0
Carson City	65	10	33.7	2.83	24.5
Cloverdale*[1]	66	13	32.0	1.49	16.0
Clover Valley				2.08	23.0
Cranes Ranch				1.84	13.0
Darrough Ranch				1.34	14.0
Downeyville	72	15	39.0	0.97	7.0
Duckwater	60	6	29.3	0.68	7.5
Elko*[5]	58	— 2	31.3	3.55	32.0
Ely	54	—12	22.6	2.65	26.5
Empire Ranch	55	— 5	25.2	1.70	15.0
Fenelon*[1]	55	— 4	22.0	2.30	22.0
Golconda*[1]	50	16	31.3	0.57	6.5
Halleck*[1]	50	— 5	25.5	2.13	20.0
Hamilton	53	—19	24.8	2.43	24.3
Hawthorne *a*[6]	65	24	38.5	0.59	4.5
Hawthorne *b*	67	18	37.9	0.35	4.5
Hot Springs*[1]	68	22	37.2	T.	T.
Humboldt*[1]	63	14	35.0	0.79	8.8
Keysers Springs				0.43	3.5
Lewers Ranch	62	7	33.2	4.34	25.9
Los Vegas	68	22	44.3	0.50	T.
Lovelock*[1]	62	19	39.9	0.41	4.5
McGill[5]	57	— 9	27.5	0.43	4.0
Midas	57	8	28.6	2.58	26.0
Mill City*[1]	57	15	35.7	0.18	2.0
Osceola	59	5	30.5	1.08	17.8
Palisade*[1]	57	4	31.7	0.65	7.0
Palmetto	62	2	30.6	3.05	30.5
Reno*[5]	68	18	38.8		6.0
Reno State University	61	— 3	32.2	0.72	5.5
Ruby Valley				1.36	20.0
St. Clair	66	12	36.0	0.15	1.5
St. Thomas	80	27	47.9	1.24	0.0
San Antonio	62	4	32.6	0.78	10.2
Sodaville	72	7	36.8	0.18	4.5
Tecoma*[1]	57	17	32.1	0.14	1.0
Toano*[1]	58	8	28.2	1.35	15.0
Tuscarora	62	— 9	22.5	3.57	32.0
Tybo	57	3	27.4	1.15	18.0
Verdi*[1]	60	7	28.4	2.75	17.5
Wadsworth*[1]	72	14	36.4	0.23	1.5
Wells	54	—12	26.6	1.30	14.5
New Hampshire.					
Bethlehem	50	—12	27.2	2.43	17.0
Concord	53	—10	31.6	3.87	16.0
Durham	56	— 6	32.6	4.40	
New Hampshire—Cont'd.					
Grafton†	56	—20	27.5	2.59	17.0
Hanover	49	—14	29.0	3.05	13.0
Keene	56	—12	31.2	4.08	14.8
Lancaster	48	—28	26.3	2.73	13.6
Nashua	59	— 4	32.8	3.73	7.2
Newton	55	— 6	32.4	3.81	4.5
North Conway	56	—14	28.8	4.12	40.0
Plymouth	50	—20	27.6	3.49	20.5
Sanbornton†	49	—10	28.1	3.24	17.0
Stratford	53	—22	28.0	2.84	13.0
Warner				4.28	10.0
West Milan	47	—25	25.7	3.57	17.0
New Jersey.					
Allaire	66	21	43.1		T.
Asbury Park	62	17	41.1	2.64	T.
Barnegat	69	21[g]	43.2[g]	2.74	
Bayonne	67	16	41.0	2.66	3.0
Beachhaven	59	22	40.9	2.62	T.
Belvidere	68	14	39.0	3.26	4.5
Beverly†	71	18	42.4	2.38	T.
Billingsport*[1]	61	22	41.3	2.28	
Blairstown	72	16	39.8	2.58	4.5
Boonton	65	11	38.2	3.50	6.6
Bridgeton	75	25	45.6	3.37	T.
Camden	68	20	42.5	2.08	T.
Cape May	66	22	42.9	2.84	
Cape May C. H.†	68	21	43.1	2.57	
Charlotteburg	62	8	36.6	3.45	4.0
Chester	63	11	37.0	4.32	5.0
Clayton	70	20	42.8	2.08	T.
College Farm†	65	16	40.4	2.47	1.8
Deckertown	64	10	38.0	2.81	2.5
Dover	66	10	37.4	3.36	5.0
Egg Harbor City	72	16	42.0	3.13	T.
Egg Island				1.55	
Elizabeth†	69	15	40.6	3.08	
Englewood	65	14	38.1	2.88	2.8
Franklin Furnace	66	11	37.6	2.64	4.5
Freehold	66	18	41.4	2.61	
Friesburg				2.13	
Gillette	66	10	37.9	2.82	2.0
Hammonton				2.56	
Hanover	62	14	39.6	2.89	1.0
Hightstown	70	20	41.7	2.70	T.
Imlaystown	69	19	42.8	1.90	T.
Junction				2.27	3.5
Lambertville	68	18	40.6	2.54	1.0
Moorestown	68	18	42.2	2.75	T.
Newark *a*	65	16	40.3	3.07	1.0
Newark *b*†	66	16	40.6	2.84	2.2
New Brunswick *a*	72	16	42.2	2.92	1.0
New Brunswick *b*	63	17	39.6	2.60	1.3
Newton	61	10	37.2	3.32	
Ocean City	67	26	41.3	2.87	T.
Oceanic	67	23	42.8	2.61	1.0
Paterson	70	16	41.6	3.16	5.5
Plainfield	64	15	40.0	2.91	2.2
Rancocas				2.46	T.
Readington*[6]	70	18	41.8		
Rivervale	67	13	38.8	3.91	5.0
Sergeantsville	66	13	40.0	2.94	0.5
Somerville	69	11	40.2	2.75	
South Orange	63	15	39.5	2.56	4.0
Staffordville				2.92	T.
Toms River	68	17	41.6	2.58	
Trenton	68	22	44.8	2.40	T.
Vineland	77	17	43.4	2.56	0.2
Woodbine	74	15	40.5	2.28	
New Mexico.					
Albert	76	15	45.0	0.55	
Albuquerque†	78	18	45.5	0.72	5.0
Alma	76	9	44.6	0.57	
Angus V. V. Ranch	65	10	39.8	0.50	T.
Aztec†	66	12	35.6	0.94	3.5
Bernalillo†	75	18	45.6	0.68	2.5
Bluewater†	67	5	35.6	0.40	4.0
Buckmans	54	—11	24.6	2.29	23.0
Chama†	63	—11	29.2	5.53	55.0
Clayton	76	8	43.0	0.00	
Deming*[5]	78	23	46.9	0.42	
East Lasvegas†	66	2	39.9	1.43	6.2
Eddy	83	24	56.0	0.33	
Engle†	72	19	47.0	1.01	
Espanola†	69	— 3	40.6	0.94	3.0
Fort Bayard	71	9	41.3	1.05	1.0
Fort Union	70	9	38.1	0.82	T.
Fort Wingate	64	5	36.8	1.60	
Galisteo†	64	9	38.3	0.66	4.0
Gallinas Spring†	72	9	43.5	1.53	2.0
Gila	75	19	47.2	0.87	
Gold Hill†	45	—11	14.2	3.20	32.0
Hillsboro†	74	19	48.6	0.50	
Labelle†	54	— 7	25.0	3.80	38.0
Las Cruces†	79	15	50.0	0.46	
Lordsburg*[5]	72	27	50.0	0.12	
Los Lunas†	76	12	43.7	0.15	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
New Mexico—Cont'd.	°	°	°	*Ins.*	*Ins.*
Monero†	53	— 7	22.8	2.31	15.0
Ocate†	63	4	36.8	0.80	7.5
Olio	72	14	44.1	T.	T.
Puerto de Luna†	76	22	47.5	0.80	8.0
Raton†	71	5	38.2	0.40	4.0
Rincon†	79	19	50.3	0.00	
Roswell†	81	21	51.2	0.59	
San Marcial†	80	17	49.6	0.34	
Shattucks Ranch	75	6	46.0	0.23	T.
Socorro†	74	18	47.6	0.58	
Springer†	74	7	40.4	0.65	0.5
Valley Ranch	64	5	36.7	1.10	T.
White Oaks†	67	23	48.6	1.21	23.0
Winsors Ranch	56	10	28.2	2.24	0.5
New York.					
Addison	67	2	36.1	2.29	1.7
Akron				2.89	
Alfred	65	— 8	33.1	3.34	7.4
Angelica†	67	— 6	35.0	4.21	10.5
Appleton	60	— 7	33.2	2.93	2.5
Arcade	64	0	32.0	2.80	9.0
Atlanta				2.18	
Avon	68	—10	34.6	1.87	
Baldwinsville	59	2	34.2	5.13	13.0
Bedford	68	10	37.6	2.72	4.7
Big Sandy*10	50	— 6	29.2		
Binghamton†	65	— 2	34.4	2.92	6.2
Bolivar	67	— 3	34.2	3.37	5.0
Boyds Corners				3.68	6.8
Brentwood	67	14	38.5	4.40	2.0
Brooklyn	60	18	39.8	3.63	2.0
Canajoharie	53	0	33.0	3.08	2.0
Canton	51	—13	28.8		
Carmel	63	7	36.4	3.34	6.5
Catskill	60	4	35.4	2.08	4.0
Charlotte*10	44	10	32.1		
Cherry Creek				4.58	
Cooperstown†	51	— 7	30.3	3.31	9.0
Cortland	65	5	33.8	1.55	
De Kalb Junction				3.19	
Dryden	65	— 1	33.1	3.37	0.2
Eagle Mills				3.41	
Easton				3.80	
Elmira†	64	2	36.5	2.41	
Fleming	62	6	34.5	2.19	4.0
Fort Niagara†	62	3	33.9	2.50	
Franklinville	64	— 5	33.1	3.04	10.0
Friendship	69	— 4	35.6	2.59	6.5
Fulton				3.35	
Glens Falls	56	— 4	31.0	4.32	15.5
Gloversville	53	— 9	29.8	5.41	19.3
Haskinsville				2.46	
Honeymead Brook	61	4	34.0	2.56	5.7
Humphrey†	65	5	34.2	2.19	12.7
Ithaca	68	3	34.8	3.04	3.6
Jamestown	66	10	36.2	5.52	17.0
Kings Station				4.95	
Lake George	62	—10	31.8	3.97	13.8
Lebanon Springs	55	— 9	32.0	2.88	4.5
Little Falls	51	2	28.4	4.46	14.5
Lockport	64	2	35.3	2.34	
Lowville	53	—22	29.2	2.97	10.0
Lyons	62	0	35.2	2.37	2.0
Madison Barracks†	55	—15	29.8	2.41	3.4
Mohonk Lake	54	4	32.4	4.00	8.0
Mount Morris				2.70	1.0
Newark Valley				2.74	
New Lisbon	59	—10	29.9	2.90	13.8
Niagara Falls				2.96	
North Hammond†	54	— 6	31.2	4.82	10.0
North Lake§	54	—25	23.0	7.30	28.0
Number Four†	51	—16	26.5	4.25	18.9
Ogdensburg	49	— 8	28.3	4.18	26.5
Oneonta	64	— 3	35.0	3.50	
Oxford	60	— 3	31.4	4.08	8.5
Palermo†	57	— 9	31.2	4.15	4.5
Perry City	67	6	32.6	2.66	5.1
Phœnix				4.52	
Pine City				2.30	
Pittsford	57	2	35.0	3.32	
Plattsburg Barracks†	52	—12	27.8	2.26	
Port Jervis	65	9	36.0	2.74	2.0
Potsdam	48	—10	27.7	2.70	14.0
Poughkeepsie	61	5	35.2	3.00	7.5
Primrose	63	13	38.4	2.83	3.5
Ridgeway	61	— 1	34.2	2.66	4.4
Rome	51	5	29.4	4.90	
Romulus	66	4	35.8	3.80	4.8
St. Johnsville	52	— 3	31.0	2.54	7.9
Saranac Lake	52	—20	27.8	2.70	9.5
Setauket†	59	17	39.1	2.80	1.5
Sherwood				2.99	
Skaneateles				4.13	
South Canisteo	70	— 3	34.8	3.01	4.0
Southeast Reservoir				3.49	5.2
South Kortright†	59	— 6	31.7	2.59	
Straits Corners	63	— 3	33.4	2.82	3.9
Wappingers Falls	61	8	37.6	2.79	4.2
Warwick				1.96	
Watertown	59	6	32.2	3.60	
Waverly†	68	0	36.4	1.89	0.8
Wedgwood	67	1	33.6	2.54	3.0
Westfield	61	5	35.8	1.84	T.
Westpoint†	63	11	36.7	3.35	5.5
Willetspoint	64	18	39.0	3.70	
North Carolina.					
Asheville†	77	20	50.1	7.03	T.
Beaufort†	77	35	55.4	3.60	
Biltmore†	80	22	51.0	6.52	T.
Bryson City†				11.93	
Chapelhill†	81	28	51.0	4.52	
Experimental Farm	78	29	53.0	4.68	
Fairbluff†				2.76	
Falkland				6.67	
Fayetteville†	84	28	54.0	4.05	T.
Greensboro†	81	27	53.4	5.07	
Henderson†	80	29	51.0	5.83	T.
Highlands	66	15	45.5	7.35	T.
Horse Cove†	74	24	49.1	8.80	T.
Lenoir*†1	74	27	50.3	5.97	
Linville†	67	20	43.7	6.92	2.0
Littleton†	75	27	49.0	4.54	
Louisburg†	80	27	52.8	4.49	T.
Lynn*†2	79		50.6	7.20	
Marion	80	23	51.8	6.04	
Mocksville	79	29	53.0	6.46	
Moncure†	81	28	53.6	5.23	T.
Monroe†	78	25	53.0	6.07	
Morganton*†1	72	22	47.0	6.29	
Mountairy†	76	24	49.2	5.12	
Mount Pleasant	80	27	52.4	6.35	
Murphy†				11.98	
Newbern†	79	36	57.4	3.85	
Oakridge†	76	25	49.8	5.21	T.
Pantego*2	84	32	51.5	5.16	
Pittsboro†	78	26	50.8	5.82	
Rockingham†	81	30	55.0	4.81	
Roxboro†	77	25	48.8	5.57	T.
Salem†	78	26	51.8	6.37	
Salisbury†	78	29	52.6	5.78	
Saxon†	80	23	51.1	4.84	T.
Selma	82	29	53.8	8.27	T.
Settle	80	24	50.4	6.61	
Skyuka	66	31	48.0	10.78	
Sloan†	82	27	55.2	4.16	
Soapstone Mount†	80	24	52.0	4.90	T.
Southern Pines *a*†	85	27	54.5	4.59	
Southern Pines *b*	83	28c	54.3	4.41	
Southport†	78	31	56.6	2.65	
Springhope*1	77	29	51.1	4.35	T.
Tarboro	85	25	52.2	4.72	T.
Waynesville†	75	19	50.8	9.23	
Weldon†	79	26	51.4	4.58	
Willeyton	81	27	51.9	5.18	
North Dakota.					
Amenia	44	—34	12.7	0.99	5.1
Ashley†	46	—36	12.2	0.97	7.0
Bordulac	44	—35	11.8		
Buxton	44	—29	11.8	0.89	6.7
Churchs Ferry	42	—38	9.4	0.98	7.0
Coalharbor†	46	—32	10.8	1.25	7.5
Devils Lake†	45	—34	11.8	1.40	4.5
Dickinson†	50	—17	15.6	2.21	13.0
Dunseith	58	—26	17.2		
Falconer	44	—41	12.5	0.03	0.0
Fargo†	52	—37	10.4	0.96	
Forman†	47	—34	15.8	0.99	10.0
Fort Berthold†	50	—46	14.5	3.37	18.0
Fort Yates†	56	—33	15.3	3.00	12.0
Gallatin†	45	—44	12.2	0.77	4.0
Grafton†	44	—34	11.3	0.95	8.0
Grand Rapids†	41	—41	12.0	2.45	21.6
Hamilton	44	—30	11.1	1.96	11.8
Jamestown†		—28†		0.74	5.2
Larimore†	41	—30	11.0	1.12	8.0
McKinney	40	—48	4.8	1.52	9.9
Mayville	46	—27	14.0	0.85	8.5
Medora†	55	—32	14.4	1.67	7.5
Milton†	44	—37	8.4		10.0
Minot†	46	—40	9.8	1.82	11.7
Minto†	46	—29	14.2	1.16	8.0
Napoleon†	40	—32	11.0	0.70	5.5
New England City†				1.90	8.0
Oakdale†	52	—22	14.6	1.80	11.0
Portal†	51	—42	5.8	0.39	1.4
Power†	48	—38	13.2	0.55	5.5
St. John†	40	—25	12.2	0.85	7.0
Sheyenne	43	—39	11.2	0.83	6.5
Steele†	42	—35	10.8	0.70	7.0
Towner†	44	—42	7.0		
University†	50	—28	14.2	0.78	6.3
Valley City†	42	—33	9.2	0.80	7.0
Wahpeton†	52	—33	18.0		
Wildrice†2			13.4	1.71	11.4
Willow City†	42	—45	8.0		
Woodbridge†	43	—38	8.2	0.66	2.6
Ohio.					
Akron	67	16	39.4	4.30	13.0
Annapolis	75	30	40.6	3.98	0.5
Ashland	66	18	38.1	3.63	6.0
Ashtabula	58	8	36.4	3.25	2.0
Atwater				3.60	10.0
Auburn	70	9	34.6	4.23	12.0
Bangorville	68	17	39.6	4.32	2.5
Basil				4.97	1.5
Bellefontaine	72	12	39.9	5.04	2.2
Bement				5.48	4.3
Benton Ridge	74	14	40.4	2.82	7.2
Bethany	74	24	46.0	7.76	
Bigprairie	71	20	40.8	3.00	
Binola	67	19	42.5	3.25	4.0
Bissells	66	12	38.2	3.60	6.5
Bladensburg	72	17	41.5	5.03	1.5
Bloomingburg	71	21	43.4	6.10	1.0
Bowling Green	67	7	38.5	4.42	6.2
Cambridge	72	13	42.0	4.64	3.0
Camp Dennison	74	26	47.0	9.91	0.4
Canal Dover	72	20	41.4	4.52	1.0
Canfield				5.00	
Canton†	71	21	41.6	3.05	0.9
Carrollton	77	30	41.8	3.67	T.
Cedarville				7.64	1.0
Celina	71	21	44.6	4.32	0.5
Cherryfork	74	30	45.5	5.98	3.0
Circleville	74	25	45.2	4.85	T.
Clarksville	72	22	44.4	7.86	0.2
Cleveland *a*	62	16	38.5	2.98	3.2
Cleveland *b*	62	15	37.7	2.40	1.5
Clifton	75	19	43.0	6.94	2.2
Coalton	75	21	45.9	4.13	0
Colebrook	64	5	37.4	2.96	3.5
Dayton *a*	73	21	44.8	6.61	T.
Dayton *b*†				6.65	0.1
Defiance	68	11	38.2	4.40	2.6
Delaware†	72	16	43.0	4.99	3.0
Demos	69	22	42.0	4.01	4.0
Dupont	71	17	37.5	3.94	1.0
Elyria	65	16	39.1	3.25	1.0
Fairport Harbor*10	60	18	36.6		
Fayetteville	70	23	44.6	8.59	0.5
Findlay	71	15	39.2	4.21	6.5
Frankfort	74	22	45.0	6.76	T.
Garrettsville†	69	12	39.2	4.21	8.0
Granville	73	30	43.2	6.56	3.0
Gratiot	70	21	42.6	5.29	7.1
Greenfield				7.50	1.0
Greenhill	71	19	40.6	3.27	1.0
Greenville	66	19	41.7	5.85	T.
Hackney				4.42	
Hanging Rock	75	22	47.4	4.12	T.
Hedges	68	13	38.4	4.14	5.5
Hillhouse	63	8	36.8	2.60	6.0
Hillsboro†	76	21	45.4	5.75	T.
Hiram	68	12	37.8	4.58	7.5
Hudson	68	13	39.0	3.29	T.
Jacksonboro	76	22	42.8	8.15	T.
Kenton†	74	17	41.8	6.05	3.4
Killbuck	72	18	41.0	4.03	1.5
Lancaster	70	22	43.2	5.39	2.0
Leipsic	69	14	38.3	3.54	5.5
Levering	71	8	37.7	3.79	2.0
Logan	79	19	44.6	4.41	
Lordstown	72	18	39.0	3.68	8.0
McArthur	74	20	44.8	4.62	T.
McConnelsville†	77	21	44.8	4.24	5.0
Mansfield†				5.30	2.0
Marietta *a*†				4.25	5.0
Marietta *b*	72	25	44.6	4.30	5.5
Marion	75	18	42.0	4.29	0.5
Medina	70	17	40.0	5.25	12.0
Milfordton	72	17	38.8	5.68	5.0
Milligan	78	21	45.3	4.06	3.0
Millport	68	18	40.8	3.76	1.0
Montpelier	64	11	35.8	4.26	4.0
Napoleon	66	13	37.7	4.05	1.9
Neapolis				4.33	4.0
New Alexandria	70	21	42.0	4.40	T.
New Berlin	69	17	40.1	3.57	
New Bremen	68	12	40.6	5.56	
New Comerstown	71	22	42.4	4.52	T.
New Holland	73	22	43.8	6.23	3.0
New Moscow				4.55	T.
New Paris	68	20	41.8	7.58	0.3
New Waterford				4.02	3.5
North Lewisburg	73	20	40.7	6.55	1.0
North Royalton	70	15	38.8	4.10	4.0
Norwalk	69	18	39.2	3.45	3.5
Oberlin	67	16	42.4	3.67	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Ohio—Cont'd.	°	°	°	*Ins.*	*Ins.*
Ohio State University	72	20	42.6	6.19	0.8
Orangeville	66	8	38.4	3.80	5.0
Ottawa	71	17	40.7	3.90	4.5
Pataskala†	72	19	42.7	6.26	3.3
Perry				2.51	4.0
Philo	74	19	43.6	4.55	3.0
Plattsburg	70	19	42.4	6.62	1.0
Pomeroy	74	23	46.4	1.75	0.2
Portsmouth *a*†				5.04	1.0
Portsmouth *b*	82	27	50.3	4.93	1.0
Richwood				5.45	T.
Ridgeville Corners	67	12	37.9	4.20	5.0
Ripley	72	23	46.4	6.09	0.4
Rittman	68	12	38.3	2.85	4.0
Rockyridge	66	14	37.4	3.38	1.5
Rosewood	69	19	41.0	6.29	0.5
Sharon Center				3.84	
Shenandoah	69	18	39.0	3.70	7.0
Sidney *b*	68	20	39.6	5.78	1.0
Sinking Spring†	71	19	45.4	5.66	T.
Spencerville				4.00	4.5
Springboro				7.10	
Spring Valley	73	21	41.7	6.92	0.5
Strongsville				3.17	11.7
Sylvania	63	10	35.2	6.22	5.0
Thurman	77	8	47.7	2.75	
Tiffin†	66	17	39.4	4.65	10.0
Upper Sandusky	70	15	41.2	5.63	10.0
Urbana	68	21	41.3	4.95	T.
Vanceburg	74	22	47.0	4.04	T.
Van Wert	68	16	38.6	4.09	7.8
Vermilion	63	17	37.7	3.93	11.5
Vickery	64	18	39.4	3.02	5.4
Walnut				4.88	0.2
Warren	67	12	39.7	4.19	13.0
Wauseon	65	12	37.7	6.66	6.5
Waverly	76	20	46.1	5.59	0.9
Waynesville	72	18	42.0	7.27	T.
Westerville	71	23	43.2	6.07	1.5
Willoughby				3.02	
Wooster *a*				3.28	1.2
Wooster *b*†	69	11	39.8	2.81	3.0
Youngstown	66	14	38.4	2.87	
Oklahoma.					
Alva				1.60	
Anadarko†	87	18	52.8	3.37	
Arapaho†	87	14	49.0	1.71	
Beaver				0.62	
Burnett†	86	18	51.7	5.24	
Clifton†	87	17	51.8	4.82	
Edmond	83	22	50.1	3.69	
Fort Reno†	86	11	51.9	1.80	
Fort Sill	83	18	52.5	2.62	
Guthrie†				4.55	
Keokuk Falls	85	18	48.2	3.40	
Mangum†	84	16	51.4	1.48	
Norman†	85	17	51.8	4.43	
Ponca	80			3.45	
Pondcreek†	91	11	53.0	2.65	
Prudence†	91	12	49.8	2.68	
Sac and Fox Agency†	86	11	51.2	5.80	
Stillwater†	88	16	51.2	3.62	
Waukomis	88	12	49.8	2.33	
Winnview†	88	13	50.4	2.29	
Woodward	83	11	49.4	0.70	0.2
Oregon.					
Albany *a*	60	25	42.6	7.97	3.0
Arlington	63	22	41.0	0.42	T.
Ashland *b*	58	21	38.4	2.35	11.5
Aurora	60	28	46.1	5.99	1.5
Aurora (near)	55	21	40.9	6.20	4.8
Bandon	55	30	43.9	7.07	
Bay City†	55	20	41.2	13.18	
Brownsville	60	30	45.1	5.30	3.0
Burns†	50	−4	23.7	0.60	6.0
Burns (near)	55	9	32.2	0.30	3.8
Cascade Locks	56	24	40.9	11.47	5.0
Comstock	58	27	40.2	8.45	13.5
Corvallis *a*	58	26	41.0	5.71	2.5
Dayville†	66	18	37.2	1.61	4.0
Eugene *a*†	57	28	40.8	6.75	4.2
Falls City				11.96	3.6
Fife†	55	2	28.0	1.70	17.0
Forest Grove	58	16	40.3	8.45	3.0
Fort Klamath	49	−7	28.8	5.81	34.8
Gardiner	57	32	43.3	14.23	
Glenora	60	15	38.3	22.77	60.5
Government Camp	49	1	27.3	16.37	122.0
Grants Pass *a*†	62	25	41.4	4.31	2.6
Happy Valley	57	3	29.4	1.54	10.0
Hood River (near)	57	19	38.3	6.78	15.0
Jacksonville	62	22	39.4	2.59	7.5
Joseph	53	−4	25.0	1.99	19.2
Junction City	58	28	41.6	7.70	4.1
Lafayette	58	29	40.9	8.20	10.8
Lakeview†	47	1	28.1	3.13	28.5

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Oregon—Con'd.	°	°	°	*Ins.*	*Ins.*
Langlois	64	31	45.8	19.14	
McMinnville†	54	22	40.4	7.26	7.5
Merlin	58	26	37.7	6.18	1.0
Monmouth	58	29	42.9	5.95	3.2
Mount Angel†	59	23	41.4	7.44	6.2
Nehalem				18.29	11.5
Newberg	54	28	40.3	6.76	3.0
New Bridge	61	9	34.2	0.98	8.0
Newport	56	28	42.2	10.12	
Pendleton	65	14	39.4	2.03	12.7
Prineville	63	8	35.8	1.43	9.3
Riddles	62	25	40.9	4.29	
Salem *b*†		24		6.11	2.9
Sheridan	59	27	42.9	7.72	12.0
Silver Lake	58	0	30.0	0.80	8.0
Silverton	56	24	40.4	7.42	8.5
Siskiyou	55	20	35.3	4.70	42.0
Sparta	47	−1	26.2	6.40	62.0
Springfield	54	27	40.4	6.37	0.5
Stafford	59	18	39.9	8.31	
The Dalles†	62	23	41.8	1.94	2.0
Toledo	58	26	41.2		2.0
Umatilla				0.91	6.5
Vale	63	10	36.0	1.76	9.5
Vernonia	56	11	39.3	8.36	25.5
West Fork	60	28	38.0	11.10	21.2
Weston	59	11	35.1	3.62	12.2
Williams	61	23	40.2	4.53	
Pennsylvania.					
Altoona	70	17	40.0	3.44	
Aqueduct	67	20	41.6	1.93	2.5
Bethlehem				2.50	3.0
Blooming Grove	60	−3	33.6	3.59	7.5
Brookville†				4.95	3.1
Browers Lock				2.04	
Cameron				3.40	
Canonsburg	72	24	45.4	1.01	0.5
Carlisle	70	21	41.0	3.90	3.5
Cassandra	66	14	40.3	3.70	7.5
Cedarrun				2.16	3.0
Centerhall†	66	12	37.7	5.08	4.0
Chambersburg†	69	19	40.0	3.40	2.0
Coatesville	75	18	42.2	2.15	1.0
Confluence†	70	19	39.6	4.38	6.0
Coopersburg	67	18	41.4	2.77	3.0
Davis Island Dam†				3.72	
Derry Station	74	13	39.9	4.89	3.5
Doylestown				2.58	
Drifton	62	10	36.3	2.33	3.8
Driftwood				3.63	
Duncannon				3.25	
Dunmore	67	6	34.8	2.48	1.5
Dushore	59	0	34.0	2.06	1.4
Dyberry†	61	−3	32.9	3.28	5.0
East Bloomsburg				2.94	
East Mauch Chunk	70	12	37.8	3.31	7.0
Easton	66	16	39.0	0.82	3.0
Edinboro	60	10	35.2		
Ellwood Junction†				2.63	0.1
Emporium	69	16	37.8	4.03	4.0
Farrandsville				3.34	3.0
Forks of Neshaminy	62	33	41.9	2.28	
Franklin	68	11	39.4	4.91	3.5
Frederick				2.29	
Freeport†				5.05	1.5
Gettysburg	72	20	41.4		
Girardville				2.89	4.2
Grampian	68	12	36.8	4.25	4.5
Greensboro†	73	24	46.4	3.54	
Greenville	66	7	39.0	5.63	5.2
Hallstead†	63	0	34.6	2.94	7.0
Hamburg	70	17	40.4	3.49	
Hollidaysburg	74	19	40.9	3.75	3.5
Honesdale				2.09	
Huntingdon *a*†	73	18	41.4	3.95	1.2
Huntingdon *b*				3.37	
Irwin				4.21	T.
Johnstown†	72	22	42.0	5.36	3.0
Karthaus				1.43	3.0
Keating				3.22	2.5
Kennett Square	70	18	42.6	3.03	0.2
Lancaster	69	21	41.5		
Lawrenceville	68	−3	36.8	2.56	
Lebanon	67	20	40.0	3.46	2.7
Leroy†	59	3	32.4	2.55	6.5
Lewisburg	68	16	38.8	4.74	3.0
Lock Haven *a*†	74	15	40.6	3.27	3.0
Lock Haven *b*				3.17	3.5
Lock No. 4†				2.29	1.0
Lycippus	68	15	42.0	4.15	2.2
Mifflin				3.80	3.0
Oil City†				5.36	2.0
Ottsville				2.52	
Parker†				4.95	4.0
Philadelphia *b*	67	23	43.4	3.21	0.2
Point Pleasant				2.08	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Pennsylvania—Cont'd.	°	°	°	*Ins.*	*Ins.*
Pottstown	68	22	42.6	2.53	1.5
Quakertown	68	16	38.8	2.71	1.0
Reading			39.8	2.02	
Renovo *a*				2.90	
Renovo *b*	70	14	38.8	3.03	2.6
Ridgway†				3.49	1.1
Saegerstown	65	−5	37.2	3.59	1.0
St. Marys	65	7	35.2	4.21	4.0
Salem Corners	58	7	34.1	3.81	6.6
Scranton	63	7	37.2	2.99	0.0
Seisholtzville				2.47	
Selinsgrove	67	15	38.6	3.74	3.0
Shawmont				2.11	
Shinglehouse	68	4	36.0	3.63	T.
Sinnamahoning				3.30	
Skippack	70	15	40.1	1.89	T.
Smethport	68	4	35.6	4.22	3.0
Smiths Corners				2.54	
Somerset	68	16	39.0	5.86	6.9
South Bethlehem	63	24	39.7		
South Eaton	64	5	36.4	2.40	1.0
State College	70	15	38.2	4.53	4.6
Sunbury				3.45	
Swarthmore	68	22	42.3		
Swiftwater	61	4	34.6	2.14	3.2
Towanda	63	6	36.5	2.20	3.0
Vanport				3.34	3.0
Warren†	67	6	37.4	2.60	4.0
Wellsboro†	65	−1	34.9	3.55	7.5
West Chester	67	21	41.8	2.55	0.2
West Newton†				4.58	
Westtown	66	18	41.0		
White Haven	61	6	34.9	2.22	3.5
Wilkesbarre†	68	12	38.4	3.78	6.0
Williamsport	64	14	38.8	3.00	2.0
York†	69	22	42.4	2.51	T.
Rhode Island.					
Bristol	58	7	36.6	2.77	2.0
Kingston	58	5	35.5	3.96	3.0
Providence *a*	59	8	38.6	2.95	4.0
South Carolina.					
Anderson†				5.39	
Batesburg†	84	29	57.4	3.85	
Blackville†	80	31	58.4	5.64	
Camden†				3.23	
Central†	89	22	52.0		
Cheraw *a*†	90	21	53.7	4.01	
Cheraw *b*†				4.63	
Clemson College	82	22	53.0	6.15	
Conway†				2.13	
Darlington (near)				3.06	
Edisto†				5.28	
Effingham†				3.27	
Florence†	82	28	55.0	3.67	
Georgetown†	88	33	60.4	3.07	
Gillisonville†	92	33	62.8	7.81	
Greenville†	79	24	50.4	7.79	
Greenwood	81	31	53.3	4.04	
Holland	80	23	53.2	6.72	
Kingstree *a*†	87	25	58.6	2.92	
Kingstree *b*†				2.92	
Little Mountain	85	29	54.6	3.36	
Longshore†	81	28	54.5	5.11	
Mount Carmel†				4.39	
Pinopolis†	81	38	59.4	5.20	
Port Royal†	81	40	61.4	5.94	
St. George†	85	29	58.8	5.65	
St. Matthews†	87	32	56.8	3.44	
St. Stephens†				3.62	
Santuck†	78	25	53.2	5.87	
Shaws Fork†	82	34	60.5	3.56	
Smiths Mills†				2.54	
Society Hill†	80	32	56.0	3.38	
Spartanburg†	80	28	52.0	6.66	
Statesburg†	83	33	57.7	4.11	
Trenton	81	36	58.2	4.08	
Trial†	90	31	58.4	5.03	
Walhalla	79	21	51.4	7.08	
Winnsboro	82	28	54.6	3.04	
Yemassee†	88	32	61.4	5.06	
Yorkville	83	31	54.9	6.63	
South Dakota.					
Aberdeen†	46	−31	15.0	7.55	20.0
Alexandria†	53	−20	21.6	3.15	3.5
Armour†	55	−15	24.6	1.52	3.0
Ashcroft†	61	−33	22.7		10.0
Brookings	50	−20	21.2	0.44	4.0
Canton	54	−20	25.8	3.62	6.8
Castlewood†	50	−28	17.1	1.85	6.5
Chamberlain†	60	−15	24.4	2.01	0.5
Cross†	65	−22	25.8	2.75	18.6
Doland	53	−24	19.2	1.41	4.1
Edgemont				0.45	
Farmingdale				1.69	2.0
Flandreau†	53	−20	23.2	1.26	7.0
Forestburg†	52	−23	21.2	1.90	6.0

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
South Dakota—Cont'd.	°	°	°	*Ins.*	*Ins.*
Forest City	.....	—21	.....	0.70	7.0
Fort Meade †	63	—16	26.0	1.36	8.6
Gary	53	—19	19.6	.....	11.0
Goudyville	49	—26	16.8	2.68	.....
Greenwood †	60	— 8	28.6	1.90	1.8
Highmore	56	—18	19.1	2.57	9.7
Hotch City †	60	—20	21.4	*2.91	4.0
Hot Springs	66	— 9	31.0	1.06	3.2
Howard †	53	—21	21.4	2.48	7.0
Kimball †	51	—16	21.6	2.47	5.0
Leslie †	58	—21	24.5	1.80	.....
Mellette †	46	—29	17.2	1.57	12.8
Menno †	57	—12	25.2	1.48	2.8
Millbank	50	—22	18.8	1.40	14.0
Mitchell †	54	—18	23.5	1.85	3.0
Oelrichs †	75	— 7	31.4	.....	.....
Parker †	54	—20	25.0	2.57	
Parkston [d]	48	—14	20.4	2.60	.....
Plankinton †	57	—17	22.6	2.65	4.0
Rochford	.....	.....	.....	2.32	22.5
Rosebud	68	— 8	29.7	1.50	5.0
Silver City	.....	.....	.....	3.21	25.0
Sioux Falls †	54	—22	23.6	2.92	8.5
Spearfish †	68	—18	22.4	3.35	31.5
Tyndall †	56	— 7	28.0	1.48	.....
Vermillion	58	—13	27.5	.....	3.5
Watertown	55	—27	19.8	1.20	9.0
Webster †	43	—13	19.4	5.55	21.4
Wentworth †	52	—20	21.2	2.23	6.5
Wessington Springs	52	—17	20.8	4.60	6.0
Tennessee.					
Andersonville *† [l]	77	25	50.6	11.37	T.
Ashwood *† [l]	78	35	54.6	12.68	T.
Benton (near) †	82	24	54.4	13.98	T.
Bluff City †	.....	.....	.....	8.35	
Bolivar †	78	31	54.4	12.45	
Bristol †	73	19	50.2	8.28	T.
Byrdstown	84	25	53.1	9.62	0.4
Cagle	75	28	51.2	13.05	T.
Carthage †	.....	.....	.....	9.32	0.3
Charleston †	.....	.....	.....	11.97	
Charlotte	86	26	53.4	10.63	0.5
Clarksville	81	30	52.4	7.22	1.0
Clinton †	.....	.....	.....	11.62	
Decatur †	79	25	52.9	11.97	
Dyersburg	78	31	52.7	10.75	T.
Elizabethton †	80	22	52.2	8.06	0.4
Elk Valley	80	26	50.9	9.48	T.
Erasmus	76	17	50.1	12.27	0.2
Fairmount *† [l]	72	32	48.9	14.06	T.
Florence †	79	30	53.4	10.53	T.
Franklin	83	30	53.4	11.36	0.2
Greeneville †	78	21	51.2	10.52	0.6
Harriman	79	25	51.8	12.15	T.
Hickory Withe	81	34	56.1	12.12	
Hohenwald †	82	25	53.8	16.43	T.
Jackson †	80	35	54.6	11.75	
Johnsonville †	81	32	55.7	7.25	
Jonesboro *† [l]	74	30	50.8	9.48	1.4
Kingston †	.....	.....	.....	10.59	T.
Liberty †	82	29	54.6	7.94	T.
Loudon †	.....	.....	.....	11.50	
Lynnville *† [l]	79	32	54.7	14.27	T.
McKenzie †	81	32	53.7	6.44	
McMinnville †	81	28	54.0	16.90	T.
Molino †	78	30	54.4	14.36	
Newport †	80	24	53.6	10.18	T.
Nunnelly *† [l]	81	30	54.2	13.63	0.2
Oak Hill *† [l]	80	24	52.7	.....	4.0
Palmetto †	80	31	54.8	12.38	T.
Paris Landing *† [l]	77	33	53.7	7.24	T.
Pope	82	32	55.2	15.60	
Riddleton †	81	27	54.0	10.92	T.
Rockwood †	.....	.....	.....	13.18	
Rogersville †	76	24	51.6	10.52	0.1
Rugby	76	17	50.6	10.41	0.5
St. Joseph †	82	27	54.8	18.14	T.
Savannah	82	35	56.0	12.60	
Sewanee †	72	24	51.9	16.79	
Springdale *† [l]	78	24	52.5	9.26	T.
Sprinnfield *† [l]	78	31	51.9	8.81	T.
Strawberry Plains †	.....	.....	.....	10.40	T.
Tellico Plains †	81	23	55.2	11.22	T.
Trenton	79	32	53.2	7.70	
Tullahoma †	73	25	51.6	16.85	
Union City †	79	30	52.4	9.25	0.2
Waynesboro	80	29	54.2	12.99	
Texas.					
Albany *† [l]	75	30	52.4	2.74	
Arthur City †	.....	.....	.....	9.44	
Austin *† [b]	85	30	61.4	.....	
Ballinger †	84	29	58.2	2.62	
Beeville †	95	34	69.8	0.93	
Blanco †	94	32	61.0	3.50	
Boerne *† [l]	84	34	63.4	4.06	
Bowie	90	30	58.0	5.55	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Texas—Cont'd.	°	°	°	*Ins.*	*Ins.*
Brady *	86	25	59.4	1.64	
Brazoria †	86	34	68.1	2.00	
Bremond *† [l]	81	40	64.4	5.90	
Brenham †	85	39	67.2	3.48	
Brighton †	94	42	70.5	1.47	
Brownwood	.....	.....	.....	2.08	
Burnet *† [l]	82	30	61.4	4.90	
Camp Eagle Pass †	101	44	71.9	0.33	
Childress *† [l]	87	18	50.8	1.38	
Coleman *† [3]	.....	28	56.6	2.54	
College Station	83	40	64.6	2.87	
Colmesneil	.....	.....	.....	4.74	
Columbia †	88	32	68.3	2.55	
Corsicana [b] †	86	40	64.6	7.28	
Cuero †	88	25	68.2	2.09	
Dallas †	84	30	57.3	8.14	
Danevang †	86	32	68.0	2.57	
Dean	86	11	44.4	0.62	
Dublin †	82	28	57.2	4.40	
Duval *† [l]	90	43	66.8	3.08	
Estelle †	86	27	57.5	7.50	
Forestburg †	86	28	57.2	6.83	
Fort Clark	96	39	62.8	0.71	
Fort McIntosh	95	38	69.0	2.06	
Fort Ringgold †	101	36	72.6	0.20	
Fort Stockton	.....	.....	.....	0.39	
Fort Worth †	86[f]	29[f]	60.5[f]	7.59	
Fredericksburg *† [l]	86[c]	28[c]	62.7[c]	1.79	
Gainesville †	83[c]	29[c]	58.2	7.91	
Georgetown *† [l]	82[c]	28	60.8	3.64	
Golindo	.....	.....	.....	7.20	
Graham	86	23	53.6	2.61	
Grapevine †	84	29	58.2	7.98	
Hale Center †	82	21	53.4	0.60	T.
Hallettsville †	87	32	68.3	1.30	
Hewitt	.....	.....	.....	7.15	
Houston †	84	38	67.0	2.93	
Huntsville †	85	34	65.4	3.90	
Junction City	.....	.....	.....	2.25	
Kent	.....	.....	.....	0.44	
Kerrville †	88	22	60.8	1.08	
Lampasas †	89	26	62.4	4.29	
Llano *† [5]	90	31	62.2	1.94	
Longview †	86	34	62.0	10.31	
Luling †	89	34	67.1	2.27	
Mann	.....	.....	.....	7.37	
Marathon	82	25	57.3	0.62	
Marshall [d]	90	42	65.8	9.79	
Moore Station	94	32	68.4	.....	
Mount Blanco †	84	19	50.6	1.06	
New Braunfels †	85	32	65.8	2.43	
Orange †	.....	35	.....	3.25	
Panter †	.....	.....	.....	7.75	
Paris †	84	27	58.4	6.88	
Point Isabel *† [l]	82	60	72.5	1.00	
Rheinland †	83	30	55.2	3.93	
Roby †	83	19	54.2	2.94	
Rocksprings	.....	.....	.....	2.61	
Sanderson †	88	32	60.6	0.36	
San Marcos [b] †	85	31	66.4	3.15	
Sierra Blanca †	80	30	52.8	0.26	
Stafford †	87	34	69.2	2.27	
Sulphur Springs †	88	32	61.8	10.15	
Temple [a]	83	35	61.2	5.41	
Tivoli	85	36	68.8	2.23	
Tulia	85	8	46.5	0.75	
Tyler	84	37	61.2	6.86	
Valentine †	82	16	55.2	T.	
Waco †	83	36	61.5	6.08	
Weatherford †	83	28	57.2	6.90	
Wichita Falls †	.....	.....	.....	3.65	
Utah.					
Alpine City †	.....	.....	.....	1.80	7.0
Blue Creek *[8]	66	0	30.5	.....	7.5
Brigham City †	.....	.....	.....	3.55	.....
Cisco †	73	16	39.4	0.58	4.0
Corinne	54	— 5	30.7	2.66	25.0
Croyden	68	—15	26.1	.....	.....
Farmington	.....	.....	.....	2.42	.....
Fillmore †	69	1	35.2	2.89	.....
Fort Duchesne †	61	— 4	27.0	0.28	2.6
Frisco	56	2	31.7	0.44	4.4
Giles †	70	11	36.5	0.34	1.0
Grover †	59	— 6	27.3	1.00	10.0
Heber	54	— 6	26.5	2.30	27.0
Huntsville †	.....	.....	.....	2.91	20.0
Koosharem	48	—10	34.0	1.07	8.0
Levan †	62	1	31.8	2.22	16.2
Loa †	54	— 6	25.7	0.69	7.0
Logan †	51	0	26.4	2.84	.....
Mammoth †	57	2	28.3	1.28	12.2
Manti †	66	— 2	31.0	2.05	20.5
Millville †	.....	.....	.....	3.39	.....
Minersville	59	1	34.0	2.40	21.0
Moab †	72	18	41.5	2.43	5.0
Mount Pleasant *† [l]	70	3	32.5	2.82	28.0

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Utah—Cont'd.	°	°	°	*Ins.*	*Ins.*
Ogden [b]	66	6	35.4	2.37	5.2
Pahreah	69	18	40.1	.....	.....
Park City †	45	— 5	24.7	8.00	80.0
Parowan †	62	— 2	32.6	3.76	37.6
Pinto	.....	.....	.....	4.11	27.8
Promontory	53	12	35.9	0.50	5.0
Provo	66	4	38.8	2.60	.....
Richfield †	60	— 5	31.5	1.95	19.5
St. George †	79	12	40.9	1.05	4.5
Scipio †	61	— 4	31.4	3.26	22.0
Soldier Summit †	55	—12	21.7	5.23	52.3
Thistle †	64	— 2	30.3	3.00	20.0
Tooele †	61	5	33.4	1.68	.....
Tropic	56	7	29.4	1.30	13.0
Vernal	59	3	32.9	0.86	6.6
Woodruff	.....	.....	.....	2.00	20.0
Vermont.					
Bennington	58	— 3	33.1	2.57	4.0
Brattleboro	55	—11	32.0	2.81	13.0
Burlington †	50	— 3	30.8	2.49	15.0
Chelsea †	52	—14	26.2	3.96	31.0
Cornwall	57	— 9	30.8	2.01	9.0
Enosburg Falls	46	—18	28.4	2.47	17.0
Hartland †	53	—20	28.8	3.36	22.0
Jacksonville	54	— 5	27.4	5.80	29.8
St. Johnsbury	46	—21	26.9	2.68	15.5
Strafford *† [l]	45	— 7	27.0	3.15	26.5
Vernon *[6]	50	—12	32.6	3.68	.....
Wells	56	—10	29.6	3.38	10.5
Woodstock	52	—25	30.1	3.21	13.5
Virginia.					
Alexandria	78	27	46.0	2.58	T.
Ashland †	87	35	50.3	4.56	T.
Barboursville	80	21	46.6	2.71	2.0
Bedford City	79	25	47.8	3.10	T.
Bigstone Gap †	79	16	48.4	9.82	T.
Birdsnest *† [l]	78	30	49.5	4.95	T.
Blacksburg	75	21	45.8	3.87	1.1
Buckingham †	81	20	48.3	3.56	T.
Burkes Garden	69	20	42.8	5.55	1.0
Callaville †	79	26	50.4	5.88	
Christiansburg †	.....	.....	.....	3.62	0.1
Clarksville †	.....	.....	.....	4.58	
Clifton Forge	82	21	47.2	3.35	0.8
Danville †	.....	.....	.....	4.13	T.
Dale Enterprise †	80	30	45.2	2.40	3.5
Doswell	75	31	51.0	4.10	
Farmville	70	25	46.6	4.20	T.
Fredericksburg †	84	25	48.5	3.02	
Gordonsville	70	28	45.4	.....	.....
Goshen	80	24	51.6	.....	.....
Grahams Forge	79	21	49.1	3.81	0.8
Hampton	78	34	51.1	4.70	
Hot Springs	70	24	43.6	2.89	1.0
Leesburg	71	22	44.0	2.34	0.2
Lexington †	70	24	47.8	3.44	2.0
Maidens	78	30	51.8	2.50	T.
Manassas †	82	15	47.0	2.99	
Marion †	74[f]	22[f]	48.2[f]	7.46	3.0
Monterey	74	22	41.9	3.82	0.6
Petersburg †	83	28	51.5	5.71	T.
Radford †	.....	.....	.....	3.75	T.
Richmond	.....	.....	.....	3.32	
Richmond (near) †	86	27	51.5	5.00	
Rockymount †	78	30	51.7	3.51	T.
Salem †	79	30	50.6	3.73	1.0
Saltville	76	22	49.0	7.13	
Smithville †	75	29	49.7	3.56	
Speers Ferry †	.....	.....	.....	9.85	T.
Spottsville †	79	25	50.0	6.97	T.
Stanardsville †	82	23	46.0	2.51	1.0
Stanleyton	81	25	47.4	2.11	T.
Staunton †	80	25	47.9	2.56	1.4
Stephens City †	77	24	45.6	1.70	0.8
Sunbeam †	77	28	48.2	5.67	
Swords Creek	80	21	51.8	5.77	
Warrenton	78	30	47.6	1.95	0.5
Warsaw †	81	25	48.5	3.74	
Westbrook Farm	78	29	48.6	.....	.....
Woodstock †	83	25	46.4	1.81	T.
Wytheville	74	25	46.6	4.69	1.0
Washington.					
Aberdeen	55	23	40.0	10.61	3.5
Anacortes	.....	.....	.....	3.24	.....
Ashford †	.....	.....	.....	7.26	9.0
Blaine †	54	5	35.0	3.52	11.4
Bridgeport	61	12	34.6	.....	.....
Cascade Tunnel	40	0	27.2	16.90	139.0
Centerville †	61	11	37.7	1.99	8.8
Chehalis †	57	17	40.4	5.80	4.2
Colfax †	55	7	35.2	3.46	11.7
Coupeville †	54	19	39.2	3.49	14.0
Dayton	63	15	38.2	1.92	5.2
Eastsound	53	20	38.4	2.10	8.5
Ellensburg †	59	8	33.4	0.15	.....
Ellensburg (near)	56	6	33.3	0.25	T.

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Washington—Cont'd.	°	°	°	*Ins.*	*Ins.*
Elma	70	26	43.2	.....	.....
Fort Simcoe†	56	16	38.2	0.69	2.3
Fort Spokane	55	0	30.8	1.78	10.5
Grandmound†	55	11	38.8	6.74	4.8
Hunters†..	47	—11	24.5	2.52	25.3
Kennewick†	68	12	40.0	0.30	
La Center	55	19	37.2	6.14	15.5
Lakeside	55	5	33.4	0.81	3.0
Lapush†	52	20	39.2	12.32	3.0
Loomis†	55	7	32.0	0.89	1.0
Madrone*†[1]	54	16	39.5	3.59	5.5
Mayfield†	57	23	39.6	7.94	15.5
Moxee Valley†	65	11	38.0	0.25	T.
New Whatcom†	57	13	40.2	3.07	6.0
Northbend	63[d]	7[d]	40.2[d]	7.65	9.0
Olga	53	19	39.0	2.47	7.0
Olympia†	56	14	39.8	6.29	3.0
Pinehill†	58	14	38.7	3.61	11.5
Pomeroy†	60	14	38.0	3.54	31.2
Pullman†	52	4	31.0	3.95	11.0
Rosalia†	52	0	30.8	2.19	13.3
Sedro†	67	11	40.9	5.32	8.2
Silvercreek*[1]	52	14	36.2	8.07	23.5
Snohomish†	59	18	40.4	4.94	8.0
Southbend	54	22	40.9	11.24	0.1
Stampede	46	0	29.6	12.65	115.0
Stillaguamish	57	13	38.2	6.31	9.5
Sunnyside†	70	15	39.3	0.25	T.
Tacoma†	56	16	38.8	4.73	16.5
Union City†	58	14	39.4	7.75	6.2
Vashon†	56	•21	39.8	5.07	9.0
Waterville†	47	—10	25.8	1.60	13.0
Wenatchee Lake	50	— 2	28.0	.....	.....
West Virginia.					
Beckley	.....	.....	... ..	2.17	1.0
Beverly†	76	24	46.6	2.73	8.0
Bloomery†	74	21	40.6	1.90	0.5
Bluefield†	78	22	47.1	4.74	0.8
Buckhannon *a*†	.....	.....	.....	4.36	10.5
Buckhannon *b*.....	74	21	45.9	.....	.....
Burlington†	76	20	44.6	1.43	4.0
Charleston†	.....	.....	.....	3.80	0.6
Dayton†	.....	.....	.....	3.21	1.5
Elkhorn†	77	23	50.1	6.52	2.0
Fairmont†	.....	.....	.....	3.32	.....
Glenville†	72	24	46.2	3.57	1.8
Grafton†	73	22	45.4	3.43	4.1
Green Sulphur	74	27	47.2	3.92	.....
Harpers Ferry†	.....	.....	.....	3.12	T.
Hewett†	78	24	50.9	4.56	0.8
Hinton *a*†	.....	.....	.....	4.59	3.0
Hinton *b*†	78	20	48.6	.....	1.5
Huntington	81	23	47.5	.....	.....
Kingwood	71	22	45.4	3.97	.....
Marlinton*†[1]	72	20	41.7	5.21	6.0
Martinsburg†	75	20	43.4	2.63	1.5
Morgantown *a*†	.....	.....	.....	2.97	1.0
Morgantown *b*†	75	22	46.0	3.88	T.
New Martinsville†	74	25	45.4	3.32	.....
Nuttallburg†	74	21	45.8	4.60	
Oldfields†	79	21	45.6	1.39	0.5
Pennsboro	74	22	47.0	3.68	3.0
Philippi†	80	24	48.4	3.99	2.5
Point Pleasant†	76	25	47.6	3.32	2.0
Powellton	77	29	49.3	3.21	T.
Romney	72	27	45.5	1.79	3.0
Rowlesburg†	.....	.....	.....	4.29	4.0
Tannery*[1]	67	25	43.2	.....	1.2
Weston *a*†	.....	.....	.....	3.92	.....
Weston *b**[1]	73	22	47.3	.....	2.5
Wheeling *a*†	.....	.....	.....	3.95	0.5
Wheeling *b*†	73	28	47.2	4.27	T.
White Sulphur Springs†	78	18	48.1	4.91	0.5
Wisconsin.					
Amherst	60	—19	25.6	2.02	20.2
Antigo*	60	—23	26.0	2.03	13.4
Apollonia*†[1]	58	—20	26.6	3.35	16.0
Barron	60	—25	22.4	2.60	18.0
Bayfield	50	—20	22.6	1.60	16.0
Beloit	61	8	31.6	2.05	8.0
Butternut	71	—25	24.3	1.65	16.4
Chilton	61	—11	27.3	1.40	7.0
Citypoint	63	—20	24.3	2.01	10.5
Crandon†	68	—22	25.8	3.30	33.0
Delavan	59	1	30.4	2.97	9.0
Dodgeville†	61	— 2	28.8	2.88	8.0
Easton†	63	—10	26.1	1.39	7.5
Eau Claire	65	—18	23.4	4.10	21.0
Fond du Lac	61	— 4	28.5	2.05	6.7
Grand River Lock	.....	.....	.....	2.10	8.8
Grantsburg†	69	—27	22.2	2.70	20.0
Gratiot†	.....	.....	.....	3.20	5.0
Hartford	.....	.....	.....	3.45	10.5
Hartland	58	— 2	29.1	3.26	6.0
Harvey	62	2	30.2	3.61	8.6
Hayward†	61	—25	21.0	3.39	22.9
Wisconsin—Cont'd.					
Hillsboro	62	— 8	27.0	2.77	11.0
Hudson	65	—13	25.8	1.61	.....
Koepenick*†[1]	56	— 8	24.0	1.30	8.0
Lancaster†	60	2	29.5	1.31	4.5
Lincoln†[2]	.....	.....	27.4	2.10	5.0
Madison†	59	5	29.0	2.38	5.3
Manitowoc†	52	2	28.4	2.25	7.2
Meadow Valley†	64	—14	26.0	2.04	6.0
Medford†	61	—20	23.3	2.15	14.5
Menasha	.....	.....	.....	1.89	9.0
Neillsville†	66	—20	25.3	3.28	21.0
New Holstein	56	0	28.8	2.73	5.0
New London	67	—10	28.0	1.69	5.0
Oconto	53	— 9	27.1	2.56	14.0
Osceola†	66	—23	22.0	2.09	17.5
Oshkosh†	60	— 5	28.1	2.35	10.5
Pepin	64	—14	24.3	2.55	12.0
Pine River†	61	—11	26.7	2.06	12.4
Portage†	63	— 4	27.4	1.93	9.0
Port Washington	55	1	29.8	4.85	7.5
Prairie du Chien	65	0	34.0	1.73	3.8
Racine	55	7	32.0	4.01	14.0
Sharon†	61	2	29.0	3.86	12.2
Shawano	60	—15	27.2	2.53	10.0
Spooner†	60	—25	22.4	2.60	20.0
Stevens Point†	61	—15	25.2	1.73	10.5
Sturgeon Bay Canal**	46	—10	26.4	.....	.....
Valley Junction†	64	—13	25.6	2.54	9.5
Viroqua	62	1	27.7	2.03	9.0
Watertown†	63	— 3	29.7	2.70	8.5
Waukesha†	56	6	29.8	3.28	8.8
Waupaca†	60	—16	25.8	2.07	18.5
Wausau†	58	—17	24.6	2.37	15.0
Wausaukee	62	—21	21.3	2.48	24.0
Westbend	56	4	30.0	4.24	7.1
Westfield†	60	— 8	27.0	2.58	7.5
Whitehall	65	— 7	27.0	1.67	9.3
White Mound†	65	— 9	28.9	1.75	8.0
Wyoming.					
Big Horn Ranch	57	—21	22.2	0.60	6.0
Carbon	70	— 2	27.1	.....	.....
Fort Laramie†	74	— 8	34.6	2.17	.....
Fort Washakie†	63	—13	27.2	0.77	7.7
Fort Yellowstone†	42	—17	19.5	1.08	10.8
Laramie	56	— 6	24.9	4.23	.....
Lusk†	66	—15	28.0	1.61	16.1
Sheridan	55	—29	20.0	2.28	21.0
Sundance	57	—23	21.4	1.90	19.0
Wheatland	63	— 8	27.9	1.10	11.0
Mexico.					
Ciudad P. Diaz	95	38	69.8	0.40	
Jalapa	95	54	69.0	1.12	
Leon de Aldamas	88	44	65.6	0.99	
Mexico	85	47	65.5	0.01	
New Brunswick.					
St. John	45	— 7	28.6	5.91	17.4
West Indies.					
Grand Turk Island	.....	.....	.....	0.60	
Nebraska.					
State Farm	.....	.....	.....	1.30	13.2
New Hampshire.					
Durham	48	2	25.8	2.31	13.5
Newton	48	2	25.6	2.22	10.5
New Mexico.					
Albert	67	19	39.9	0.65	6.5
Albuquerque	66	20	39.1	0.13	.....
Alma	75	14	40.0	0.47	.....
Angus V. V. Ranch	61	10	35.8	T.	T.
Aztec	56	1	27.8	1.30	6.0
Bernalillo	70	18	39.4	T.	T.
Bluewater	60	0	30.8	1.10	11.0
Buckmans	46	—22	18.0	1.02	17.5
Chama	56	—15	24.0	4.90	49.0
Clayton	65	15	39.2	1.10	11.0
East Las Vegas	65	11	35.8	0.70	7.4
Eddy	77	23	49.2	0.00	
Engle	73	18	40.6	0.00	
Espanola	63	4	33.7	0.14	1.0
Estalina Springs	.....	.....	.....	0.35	3.5
Fort Bayard	68	10	37.8	0.30	2.0
Fort Union	63	12	33.8	0.05	0.5
Fort Wingate	61	— 3	32.5	4.30	.....
Galisteo	63	14	34.3	0.14	.....
Gallinas Spring	68	12	37.6	0.91	7.0
Gila	73	21	42.5	0.26	T.
Gold Hill	57	—12	18.2	4.00	40.0
Hillsboro	74	19	43.2	0.02	
Labelle	50	—10	20.8	2.50	25.0
Las Cruces	77	16	44.6	0.00	
Las Lunas	73	12	38.4	0.25	
Lower Penasco	72	17	42.4	T.	
Monero	50	—12	22.8	2.25	23.0
Ocate	58	13	29.8	0.70	6.0
Puerto de Luna	70	24	42.8	0.20	2.0
Raton	59	5	32.0	0.51	3.3
Rincon	73	21	45.4	0.00	
Roswell	79	16	45.2	.....	
San Marcial	71	17	43.6	T.	
Shattucks Ranch	72	14	42.7	0.20	2.8
Socorro	70	16	40.6	0.05	
Springer	61	9	32.2	0.37	2.0
Valley Ranch	60	6	31.2	0.80	8.0
White Oaks	63	19	40.2	0.55	5.5
Winsors Ranch	.....	.....	....	0.38	5.0
New York.					
Alfred	45	1	24.7	1.67	13.7
Ohio.					
Bellefontaine	.....	.....	.....	2.61	.....
Granville	60	2	32.4	3.94	2.5
Oklahoma.					
Anadarko	.....	....	.....	1.20	
Oregon.					
Government Camp	48	3	29.6	17.49	76.0
Lafayette**	62	28	42.3	5.77	0.2
South Dakota.					
Yankton	47	—13	21.0	0.84	.....
Washington.					
Eastsound[b]	53	27	40.2	1.32	T.
Wyoming.					
Wheatland	62	2	29.5	0.15	1.5

Late reports for February, 1897.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Alaska.					
Juneau	47	12	31.0	5.08	22.0
Killisnoo	41	11	30.9	3.40	22.5
Arizona.					
Dragoon	.....	.....	.....	0.00	
Walnut Grove	.....	.....	.....	0.18	
Arkansas.					
Luna Landing*[6]	77	28	50.5	2.68	
California.					
Jackson	60	32	41.8	10.36	12.8
Napa	72	30	49.4	5.68	
Point Lobos	60	37	49.5	4.47	
San Miguel Island	71	34	51.6	3.57	
Santa Barbara *a*	75	33	52.8	3.65	
Santa Maria	72	36	52.6	4.00	
Trinidad L. H	.....	.....	.....	10.59	
Engineers Quarters‡	.....	.....	.....	11.74	18.0
Morses House‡	.....	.....	.....	20.14	31.5
Deep Creek‡	.....	.....	.....	13.03	27.0
Squirrel Inn‡	.....	.....	.....	13.31	24.0
Holcomb Creek‡	.....	.....	.....	7.89	21.0
Connecticut.					
Colchester	51	2	28.4	2.65	11.2
Maryland.					
Deerpark	.....	3	.....	4.20	4.0
Pocomoke City	68	20	41.5	5.86	... ..
Massachusetts.					
Wakefield	50	2	27.8	2.67	13.0
Michigan.					
North Manitou Island*[10]	35	2	25.4	.....	.....
Missouri.					
Princeton*[1]	62	— 6	30.3	1.90	9.0

EXPLANATION OF SIGNS.

For explanation of signs see page 33, January REVIEW.

The absence of a numeral indicates that the mean temperature has been obtained from daily readings of the maximum and minimum thermometers.

An italic letter following the name of a station, as "Livingston *a*," "Livingston *b*," indicates that two or more observers, as the case may be, are reporting from the same station. A small roman letter following the name of a station, or in figure columns, indicates the number of days missing from the record; for instance, "a" denotes 14 days missing.

CORRECTIONS.

Mississippi, Louisville, September, 1896, make precipitation read 3.41 instead of 3.81; Water Valley, April, 1896, make precipitation read 3.91 instead of 2.91.

Missouri, Cowgill, February, 1897, make precipitation read 1.20 instead of 3.00; Gordonville, 4.72 instead of 4.92; Hastain, 6.83 instead of 7.88; and Houston, 3.64 instead of 4.14.

Nevada, Hawthorne (*b*), December, 1896, make precipitation read 0.09 instead of 9.09, and St. Thomas, 0.30 instead of 6.30.

Oregon, Aurora, January, 1897, make mean temperature read 44.3 instead of 54.0; Dayville, February, 1897, make precipitation read 2.05 instead of 1.85.

Page 4, line 9 from the bottom, and page 46, line 20 from the top, omit the words "given in detail in Table II and for the winter months is also."

TABLE III.—*Data from Canadian stations for the month of March*, 1897.

Stations.	Pressure.			Temperature.		Precipitation.		Prevailing direction of wind.	Total depth of snow.
	Mean not reduced.	Mean reduced.	Departure from normal.	Mean.	Departure from normal.	Total.	Departure from normal.		
	Inches.	*Inches.*	*Inches.*	°	°	*Inches*	*Inches.*		
St. Johns, N. F	29.62	29.77	− .06	25.4	− 2.4	2.47	.....	ne.	17.6
Sydney, C. B. I	29.86	29.92	+ .05	27.0	+ 1.0	4.19	− 1.06	nw.	21.5
Grindstone, G. St. L.	.....	.....	.....	.....	.....	.....	.....	.....	.....
Halifax, N. S	29.88	30.02	+ .03	29.8	+ 1.3	5.47	− 0.39	w.	16.2
Grand Manan, N. B.	29.93	29.98	+ .08	29.8	.....	5.99	+ 1.84	w.	23.7
Yarmouth, N. S.	29.90	29.98	+ .10	31.1	+ 0.1	5.23	+ 0.37	nw.	11.2
St. Andrews, N. B.	.....	.....	.....	28.5	+ 1.8	4.04	− 0.35	nw.	20.5
Charlottet'n, P. E. I.	29.90	29.94	+ .06	25.8	+ 1.2	3.95	+ 0.54	nw.	13.1
Chatham, N. B	29.94	29.96	+ .06	21.4	+ 0.4	3.21	− 1.03	w.	25.9
Father Point, Que.	29.97	30.00	+ .10	18.8	− 0.7	3.24	+ 0.78	e.	32.4
Quebec, Que	29.66	30.01	+ .06	21.0	+ 1.0	3.89	− 0.02	ne.	35.9
Montreal, Que	29.80	30.02	+ .06	25.2	+ 3.2	4.05	+ 0.36	sw.	23.7
Rockliffe, Ont	29.50	30.04	+ .06	20.4	+ 4.4	3.70	+ 1.41	nw.	22.0
Kingston, Ont	29.71	30.04	+ .04	28.1	+ 4.1	2.56	− 0.50	w.	....
Toronto, Ont	29.65	30.05	+ .02	30.8	+ 5.3	2.97	+ 0.37	n.	6.4
White River, Ont	28.69	30.13	+ .04	12.9	− 0.1	0.93	− 0.22	n.	9.3
Port Stanley, Ont	29.38	30.05	+ .02	31.6	.....	3.88	+ 0.93	e.	10.4
Saugeen, Ont	29.31	30.01	+ .04	27.6	+ 4.6	4.02	+ 1.47	e.	19.2
Parry Sound, Ont	29.31	30.04	+ .02	22.8	+ 4.3	4.21	+ 1.59	w.	23.2
Port Arthur, Ont	29.33	30.07	− .01	18.6	+ 4.6	0.81	− 0.36	ne.	8.1
Winnipeg, Man	29.20	30.09	− .03	10.8	+ 0.3	1.58	+ 0.56	w.	13.1
Minnedosa, Man	28.16	30.10	+ .01	8.0	− 2.0	1.67	+ 1.01	e.	8.6
Qu'Appelle, Assin.	27.68	30.11	+ .04	5.4	− 9.6	0.41	− 0.23	nw.	3.9
Medicine Hat, Assin	27.58	30.05	+ .02	10.9	−16.6	0.50	− 0.11	s.	5.0
Swift Curr't, Assin.	27.34	30.12	+ .02	6.9	−16.1	0.24	− 0.58	sw.	2.4
Calgary, Alberta	26.24	30.02	− .02	10.6	−16.4	0.26	− 0.50	w.	2.6
Prince Albert, Sask.	28.46	30.09	.....	7.2	.....	0.16	.....	sw.	1.6
Edmonton, Alberta.	27.56	30.06	+ .08	9.4	−16.6	0.33	− 0.32	se.	3.3
Battleford, Sask	28.24	30.12	.....	3.8	.....	0.16	.....	se.	1.6
Kamloops, B. C.	28.64	29.93	.....	28.8	.....	0.55	.....	e.	3.9
Hamilton, Bermuda	29.98	30.14	+ .06	63.8	.....	2.54	.....	sw.	
Banff, Alberta	25.11	29.99	... .	13.2	.....	1.05	.....	sw.	10.3
Esquimalt, B. C.	29.83	29.86	... .	37.6	.....	4.80	....	sw.	11.5
Ottawa, Ont	29.70	30.08	.....	23.4	... .	4.37	.....	e.	28.6
February, 1897.									
Hamilton, Bermuda	29.96	30.12	+ .01	62.1	.....	4.01	.....	s.	

TABLE IV.—*Meteorological observations at Honolulu, Republic of Hawaii, by Curtis J. Lyons, Meteorologist to the Government Survey.*

Pressure is corrected for temperature and reduced to sea level, but the gravity correction, −0.06, is still to be applied.

The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 10. Two directions of wind, connected by a dash, indicate change from one to the other; also same for force.

The rainfall for twenty-four hours is given as measured at 6 a. m. on the respective dates.

January, 1897.	Pressure at sea level.			Temperature.					Relative humidity.			Wind.		Cloudiness.	Rain measured at 6 a. m.
	9 a. m.	3 p. m.	9 p. m.	6 a. m.	2 p. m.	9 p. m.	Maximum.	Minimum.	6 a. m.	2 p. m.	9 p. m.	Direction.	Force.		
	Ins.	*Ins.*	*Ins.*	°	°	°	°	°	%	%	%				*Ins.*
1	29.97	29.92	30.04	60	75	66	77	60	87	58	73	sw-n.	1	7	1.17
2	30.10	30.04	30.13	64	72	68	75	62	77	64	61	w-nne.	1-4	3	T.
3	30.15	30.06	30.14	67	75	67	76	67	62	55	73	ne.	3	2-1	T.
4	30.15	30.06	30.12	65	77	68	79	64	81	52	76	ne.	2	5	0.00
5	30.16	30.05	30.14	67	73	66	79	67	97	91	88	sw-ne.	1	10-5	0.06
6	30.16	30.06	30.14	69	77	70	79	67	83	59	88	e-ne.	1-4	3	0.32
7	30.17	30.07	30.14	69	79	69	80	66	74	71	89	nnw-se	2	3	T.
8	30.19	30.10	30.16	67	76	69	79	67	90	58	81	w-n.	2	7	T.
9	30.16	30.07	30.18	70	77	70	79	69	79	58	71	ne.	4	4	0.10
10	30.15	30.09	30.14	70	76	69	78	67	68	61	83	ne.	4-5	4	0.05
11	30.13	30.04	30.13	70	78	71	79	68	65	51	72	ne.	4	4	0.02
12	30.12	30.04	30.15	70	78	70	81	69	74	57	76	nw-ne.	2	5	0.01
13	30.18	30.08	30.16	68	79	71	81	67	86	65	70	ne-se.	1	5	T.
14	30.17	30.04	30.10	66	78	68	81	64	74	58	76	w-sw.	1	2	T.
15	30.10	30.01	30.09	64	78	66	81	63	90	54	82	s-ne.	0-1	1	0.00
16	30.11	30.00	30.10	67	78	71	79	64	82	61	70	se-ne.	2	3	0.00
17	30.17	30.04	30.14	69	78	70	79	67	70	55	70	ne.	3-4	2	T.
18	30.16	30.07	30.11	70	78	72	78	69	64	53	58	ene.	4-5	3	0.00
19	30.14	30.03	30.08	71	78	68	78	70	63	62	73	ne.	4	3	0.00
20	30.05	29.95	30.00	67	76	66	78	64	82	68	75	nw-se.	1-3	1	T.
21	30.04	29.95	30.02	65	72	66	76	64	82	66	72	w-wnw.	1-4	5	0.00
22	30.02	29.92	29.97	62	73	62	75	62	64	51	77	sw-ne.	2	1	0.06
23	29.88	29.76	29.80	63	75	68	77	61	78	67	71	sw.	0-5	5	0.00
24	29.80	29.79	29.88	64	75	65	77	63	70	....	70	sw.	3-4	4	0.22
25	29.92	29.86	29.96	67	74	62	78	66	80	....	64	nw-ne.	2-4	8-2	0.00
26	29.96	29.85	29.85	59	75	60	77	55	73	....	69	se-sw.	2-4	5	0.00
27	29.86	29.83	29.94	67	76	65	78	66	92	....	76	w-sw.	3-4	5	0.35
28	30.00	29.90	29.99	61	76	71	78	60	76	....	79	nw-se.	0-4	5-10	0.00
29	30.05	29.98	30.13	71	75	67	79	70	88	....	82	sw.	0-3	10-5	0.02
30	30.18	30.10	30.18	64	74	66	77	63	74	....	76	sw.	0-3	1	0.32
31	30.21	30.12	30.15	63	75	66	77	63	84	....	85	nw-ne.	1	3	0.00
	30.09	30.00	30.07	66.3	76.0	67.8	78.2	65.1	77.7	....	75.0	....	2.4	4.0	2.70

Mean temperature: 6+2+9+3 is 70.0; extreme temperatures, 81° and 55°.

A storm on the 23d, felt with more or less severity over all the islands, was indicated here only by a fall of the barometer, high wind for a few hours, and two smart showers.

Meteorological observations at Honolulu, Republic of Hawaii, by Curtis J. Lyons, Meteorologist to the Government Survey.

February, 1897.	Pressure at sea level.			Temperature.					Relative humidity.			Wind.		Cloudiness.	Rain measured at 6 a. m.
	9 a. m.	3 p. m.	9 p. m.	6 a. m.	2 p. m.	9 p. m.	Maximum.	Minimum.	6 a. m.	2 p. m.	9 p. m.	Direction.	Force.		
	Ins.	*Ins.*	*Ins.*	°	°	°	°	°	%	%	%				*Ins.*
1	30.12	30.09	30.20	65	78	70	79	64	82	60	78	se.	0-2	1	0.00
2	30.22	30.13	30.21	68	78	72	81	67	79	59	89	e-sw.	1	4	0.00
3	30.24	30.17	30.23	71	78	71	81	70	89	77	83	s-sw.	0-2	5-9	0.00
4	30.21	30.15	30.21	69	77	71	79	67	90	74	86	nne.	3	7-10	0.00
5	30.19	30.12	30.21	69	77	70	80	68	86	77	83	nne.	3	5-9	0.01
6	30.19	30.10	30.18	67	79	71	80	67	96	57	72	ne.	4	7	0.24
7	30.22	30.10	30.15	71	74	71	79	70	71	79	70	ene.	4	7	0.01
8	30.15	30.04	30.12	71	78	72	79	68	71	56	71	ene.	5	5-8	0.12
9	30.12	30.05	30.13	71	78	71	79	69	70	57	79	ene.	5	7	0.02
10	30.15	30.06	30.15	71	76	71	76	69	72	63	71	ene.	5	6	0.01
11	30.15	30.05	30.14	68	78	71	78	66	74	56	78	ene.	4-6	7	0.30
12	30.16	30.11	30.20	69	77	72	77	68	84	56	75	ene.	4	8	0.28
13	30.18	30.09	30.19	71	78	73	79	70	71	61	72	ene.	3-4	8	0.07
14	30.16	30.08	30.16	71	77	72	80	69	73	67	71	ene.	4	7	0.02
15	30.16	30.07	30.15	69	78	71	78	68	74	47	68	ene.	4	3	0.05
16	30.14	30.04	30.14	70	80	71	82	69	70	56	67	ene.	3	3	0.00
17	30.14	30.06	30.18	69	79	71	81	68	85	60	82	ne.	3	4	0.01
18	30.17	30.03	30.17	69	78	70	80	68	74	55	78	ne.	3	5	0.20
19	30.20	30.11	30.20	68	78	70	81	67	73	64	70	ne.	3	5	0.04
20	30.21	30.12	30.20	68	78	68	79	66	73	53	79	ne.	4-3	3	0.20
21	30.21	30.13	30.19	68	75	70	79	67	65	62	71	ne.	3-5	3	0.25
22	30.19	30.10	30.18	69	74	69	78	68	72	62	83	ne.	5-3	4	0.05
23	30.17	30.07	30.15	70	78	71	79	69	66	50	67	ene.	4	3	0.01
24	30.13	30.05	30.10	69	76	69	78	68	66	58	68	ne.	3	5	T.
25	30.13	30.04	30.11	68	78	69	79	68	65	55	72	ene.	3	4	T.
26	30.11	30.04	30.12	68	79	69	80	68	71	49	73	ne.	1-4	4	T.
27	30.09	29.99	30.06	67	76	68	81	66	75	55	72	ne.	1-3	3	T.
28	30.09	30.06	30.07	65	78	67	81	62	75	59	71	n-ne.	2	1-7	0.00
	30.16	30.08	30.16	68.9	77.4	70.4	79.9	67.6	75.4	60.1	75.0	.....	3.3	5.1	1.89

Mean temperature: 6+2+9+3 is 72.2; extreme temperatures, 82° and 62°.

The wind and rain storm of February 10-11th was experienced generally over the islands.

TABLE V.—*Mean temperature for each hour of seventy-fifth meridian time, March, 1897.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Bismarck, N Dak.....	9.4	8.8	7.5	7.2	6.9	6.7	6.4	6.5	6.2	7.5	10.0	12.7	14.5	16.4	17.8	18.7	18.9	18.7	17.8	16.0	14.0	12.7	12.2	11.5	11.9
Boston, Mass.	33.9	33.4	32.9	32.4	32.3	32.1	32.9	34.3	35.6	37.0	38.4	39.7	40.3	40.9	40.7	40.9	40.2	39.3	38.4	37.7	37.2	36.5	35.7	35.3	36.6
Buffalo N Y.....	31.6	31.6	31.7	31.1	31.0	31.2	31.7	32.5	33.5	34.3	35.4	36.5	37.2	37.6	37.4	37.3	36.2	35.0	34.5	34.5	33.7	33.1	32.8	32.4	33.9
Chicago, Ill.....	33.8	33.3	32.6	32.0	31.8	31.5	31.1	31.9	31.7	32.3	33.2	34.0	34.6	34.9	35.8	35.9	36.3	36.1	35.8	36.0	35.6	35.1	34.7	34.3	33.9
Cincinnati, Ohio.....	44.0	43.3	42.9	42.4	42.0	41.5	40.9	41.7	42.2	43.3	45.2	47.1	48.2	49.4	50.7	51.4	51.8	51.8	50.8	50.0	48.6	47.5	46.2	45.3	46.2
Cleveland, Ohio	36.8	36.5	35.7	35.4	35.1	34.9	34.6	35.1	36.4	37.1	37.2	37.7	37.6	38.4	38.8	39.1	39.7	40.2	39.7	39.3	39.1	38.3	37.9	37.8	37.4
Detroit, Mich.....	31.8	31.7	31.3	31.0	30.8	30.6	30.5	31.3	32.3	33.3	34.6	35.6	36.8	37.6	38.4	38.9	39.1	38.3	36.9	35.8	34.5	34.1	33.4	32.8	34.2
Dodge City, Kans.....	37.6	36.4	35.2	34.7	33.8	33.4	32.6	32.1	33.6	37.5	41.9	45.5	48.5	50.4	52.2	52.9	53.1	53.0	51.7	47.9	44.4	42.5	40.7	39.6	42.1
Eastport, Me.*.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Galveston, Tex.....	65.6	65.5	65.5	64.9	64.6	64.6	64.4	64.3	64.1	65.0	66.1	67.4	68.3	68.7	69.2	69.1	68.8	68.3	67.6	66.9	66.6	66.4	66.1	65.9	66.4
Havre, Mont.....	8.6	7.5	6.9	6.2	5.5	5.5	4.4	3.9	3.3	3.8	6.2	8.8	11.7	13.4	16.0	17.4	18.5	19.4	18.8	17.3	15.2	13.1	11.7	11.0	10.6
Kansas City, Mo.....	39.1	38.3	37.3	36.8	36.5	36.2	35.9	35.9	36.3	38.0	40.1	42.2	44.2	46.0	47.8	48.8	49.5	49.0	47.9	46.7	44.5	43.2	42.0	41.0	41.8
Key West, Fla.....	73.8	73.5	73.3	73.2	73.3	73.1	73.9	74.8	76.5	77.5	78.7	78.9	79.5	79.5	79.0	78.5	77.7	76.5	75.5	75.2	74.8	74.8	74.4	74.3	75.8
Memphis, Tenn.....	54.5	53.5	52.9	52.4	51.7	51.2	50.3	50.3	50.5	51.5	53.1	54.8	56.6	57.3	58.4	59.0	59.8	59.9	59.7	59.0	58.1	57.6	57.0	55.5	55.2
New Orleans, La.....	65.6	65.5	65.0	64.8	64.7	64.6	64.5	65.0	66.0	67.5	69.5	71.3	73.1	73.9	74.5	74.5	74.2	73.3	71.8	70.2	68.8	67.9	67.1	66.5	68.7
New York, N. Y.....	36.8	35.9	35.2	34.7	34.3	34.1	34.2	35.2	35.9	37.2	38.8	40.3	41.9	43.1	43.2	43.5	42.7	41.8	40.9	40.7	39.5	39.1	38.5	37.8	38.6
Philadelphia, Pa.....	40.1	39.1	38.4	37.9	37.6	37.5	37.7	39.1	40.3	41.8	43.5	45.2	47.0	48.3	49.0	49.3	49.3	48.1	46.4	45.1	44.0	43.0	42.1	41.3	43.0
Pittsburg, Pa.....	42.0	40.9	40.2	39.8	39.4	39.5	39.5	40.5	41.8	43.3	45.3	46.6	47.3	49.1	49.6	49.6	49.7	49.0	48.0	47.0	45.9	45.0	44.1	43.4	44.4
Portland, Oreg.....	40.2	40.0	39.4	38.9	38.5	38.4	38.0	38.0	37.3	37.1	37.5	38.5	39.5	40.9	41.9	42.7	42.8	43.1	43.3	43.2	42.5	41.5	41.1	40.5	40.2
St. Louis, Mo.....	44.1	43.5	42.6	42.1	41.4	41.0	40.8	41.0	41.5	42.5	44.4	46.4	47.9	49.3	50.6	51.0	51.6	50.9	49.6	48.6	47.9	47.0	46.5	45.7	45.8
St. Paul, Minn.....	23.2	22.5	21.9	20.9	20.5	20.1	19.8	19.6	19.8	20.7	22.6	24.4	26.4	27.8	28.9	29.7	30.3	30.3	29.5	28.0	27.1	26.2	25.5	24.8	24.6
Salt Lake City, Utah..	32.2	31.9	31.6	31.8	31.3	30.6	30.2	30.4	29.9	29.9	31.6	33.7	35.0	36.7	37.4	37.5	38.4	38.7	38.5	37.6	36.4	34.9	33.6	32.7	33.9
San Diego, Cal.....	51.9	51.3	50.5	50.2	49.5	49.2	49.1	48.8	48.6	49.5	52.8	55.5	57.3	58.3	59.2	59.2	59.7	59.5	58.4	57.7	56.0	55.1	53.9	52.9	53.9
San Francisco, Cal....	47.5	47.1	46.8	46.7	46.2	45.8	45.5	45.5	45.4	45.3	46.4	47.7	49.5	50.3	51.8	52.0	52.5	52.1	51.3	50.7	49.8	48.9	48.1	47.9	48.3
Savannah, Ga.....	58.7	58.0	57.8	57.5	57.0	56.9	57.3	59.2	60.9	63.6	65.2	67.0	68.3	68.8	69.4	68.4	67.4	65.7	63.5	62.2	61.1	60.6	60.2	59.6	62.3
Washington, D. C....	41.9	41.3	40.6	39.6	39.0	38.8	38.9	40.8	42.8	44.9	47.1	48.9	50.5	52.0	52.7	53.3	53.1	52.2	49.8	48.3	46.7	45.5	44.1	43.1	45.7

*Not received in time for publication.

TABLE VI.—*Mean pressure for each hour of seventy-fifth meridian time, March, 1897.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Bismarck, N. Dak...	28.225	.217	.214	.211	.207	.208	.207	.206	.210	.213	.215	.214	.209	.204	.195	.190	.191	.195	.203	.210	.219	.228	.231	.223	.211
Boston, Mass.....	29.915	.910	.904	.907	.911	.920	.929	.933	.935	.930	.917	.905	.884	.870	.862	.859	.865	.875	.885	.893	.899	.899	.899	.901	.900
Buffalo, N. Y.....	29.189	.183	.175	.169	.169	.179	.187	.190	.196	.200	.202	.196	.190	.176	.173	.174	.179	.184	.190	.198	.203	.203	.197	.191	.187
Chicago, Ill.....	29.125	.128	.128	.122	.122	.127	.139	.148	.157	.163	.159	.158	.151	.134	.119	.116	.112	.114	.115	.119	.125	.126	.128	.126	.132
Cincinnati, Ohio ...	29.365	.371	.370	.364	.371	.383	.394	.404	.413	.416	.414	.407	.397	.378	.365	.355	.343	.344	.349	.355	.361	.365	.368	.366	.376
Cleveland, Ohio	29.183	.178	.176	.169	.177	.187	.196	.204	.210	.213	.215	.212	.206	.192	.185	.187	.186	.185	.191	.194	.195	.195	.195	.188	.192
Detroit, Mich.....	29.236	.235	.228	.221	.225	.228	.240	.246	.253	.257	.256	.256	.249	.238	.231	.230	.231	.231	.239	.242	.246	.249	.245	.235	.239
Dodge City, Kans..	27.280	.277	.279	.280	.274	.275	.287	.293	.306	.311	.315	.313	.300	.280	.257	.240	.233	.228	.230	.240	.252	.259	.266	.268	.273
Eastport, Me.*.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Galveston, Tex.....	29.955	.949	.940	.931	.926	.930	.942	.952	.963	.975	.979	.978	.969	.947	.932	.914	.905	.903	.905	.907	.924	.936	.945	.944	.940
Havre, Mont.*.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kansas City, Mo....	28.963	.958	.953	.944	.938	.944	.951	.956	.965	.970	.970	.967	.953	.941	.924	.915	.909	.909	.918	.928	.939	.949	.952	.957	.945
Key West, Fla.....	30.095	.093	.089	.085	.085	.088	.082	.098	.109	.113	.116	.106	.085	.067	.055	.045	.043	.050	.063	.077	.091	.100	.100	.093	.081
Memphis, Tenn.....	29.580	.585	.586	.581	.585	.590	.600	.614	.624	.633	.641	.635	.620	.596	.576	.560	.548	.546	.548	.554	.558	.561	.562	.565	.585
New Orleans, La....	29.986	.983	.977	.970	.965	.971	.977	.986	.002	.014	.016	.012	.998	.973	.958	.946	.940	.941	.946	.952	.962	.973	.978	.976	.975
New York, N. Y....	29.746	.741	.728	.728	.731	.739	.746	.755	.757	.754	.740	.725	.709	.697	.690	.689	.696	.703	.709	.715	.727	.734	.736	.735	.726
Philadelphia, Pa....	29.974	.973	.964	.960	.964	.970	.976	.990	.995	.989	.976	.966	.949	.936	.928	.924	.924	.930	.940	.947	.959	.961	.962	.963	.959
Pittsburg, Pa.....	29.149	.148	.136	.138	.145	.152	.160	.164	.166	.169	.168	.160	.145	.128	.128	.124	.128	.136	.142	.146	.151	.149	.148	.145	.147
Portland, Oreg.....	29.783	.785	.780	.781	.776	.772	.767	.764	.767	.771	.776	.785	.791	.795	.790	.786	.776	.775	.773	.772	.770	.777	.784	.788	.779
St. Louis, Mo.....	29.414	.415	.417	.412	.412	.416	.420	.431	.437	.439	.432	.423	.417	.397	.380	.370	.365	.367	.370	.371	.383	.393	.397	.406	.403
St. Paul, Minn.....	29.122	.125	.131	.127	.123	.126	.131	.133	.140	.143	.142	.140	.132	.119	.107	.100	.096	.096	.099	.107	.112	.115	.119	.122	.121
Salt Lake City, Utah	25.542	.540	.539	.540	.532	.525	.525	.530	.534	.536	.543	.546	.550	.546	.540	.529	.522	.521	.524	.530	.532	.540	.547	.549	.536
San Diego, Cal.....	29.998	.997	.991	.989	.980	.972	.964	.967	.977	.986	.999	.013	.018	.017	.009	.995	.979	.972	.967	.966	.969	.976	.988	.995	.987
San Francisco, Cal..	29.939	.938	.939	.936	.931	.925	.921	.926	.933	.941	.949	.959	.967	.968	.958	.947	.931	.926	.921	.918	.920	.927	.936	.942	.937
Savannah, Ga.....	30.035	.033	.022	.016	.017	.029	.041	.049	.057	.065	.063	.055	.036	.013	.995	.988	.985	.985	.992	.002	.014	.020	.023	.021	.023
Washington, D. C...	29.988	.985	.978	.976	.979	.989	.000	.006	.011	.008	.000	.988	.966	.947	.936	.929	.932	.943	.952	.966	.973	.980	.982	.979	.975

*Not received in time for publication.

TABLE VII.—*Average wind movement for each hour of seventy-fifth meridian time, March, 1897.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex.	9.4	9.2	9.5	10.4	10.1	9.2	8.9	8.3	8.3	9.4	11.2	11.7	12.3	11.6	10.6	11.5	11.7	11.7	11.4	9.9	9.5	9.6	8.5	9.0	10.1
Albany, N. Y.	7.7	7.1	6.5	6.9	6.9	6.9	7.7	9.6	10.8	11.3	12.2	12.8	13.0	14.0	13.8	13.2	13.1	11.9	11.2	10.6	9.6	9.4	8.9	8.8	10.2
Alpena, Mich.	11.1	10.7	11.0	10.9	10.1	9.4	9.2	9.6	9.4	10.0	10.5	10.8	11.3	11.3	11.7	11.6	11.2	11.2	10.1	10.0	10.5	10.7	10.6	10.8	10.6
Amarillo, Tex.	17.9	17.4	17.5	16.6	15.5	15.3	15.0	14.4	13.4	16.1	18.9	20.1	19.9	19.3	20.7	21.1	23.1	23.5	23.6	20.2	17.5	18.4	18.7	19.3	18.5
Atlanta, Ga.	11.3	11.4	11.6	11.5	10.9	11.3	10.5	10.6	10.9	10.7	10.7	11.1	11.2	12.1	12.3	12.5	12.4	11.8	10.3	10.6	11.2	11.1	11.9	12.1	11.3
Atlantic City, N. J.	11.3	11.3	11.7	11.8	10.9	10.5	10.6	11.5	13.3	14.0	14.4	14.9	15.5	14.6	14.5	14.8	14.3	12.6	12.2	10.7	10.9	10.8	10.9	10.8	12.5
Augusta, Ga.	5.2	4.9	5.1	5.2	5.2	5.2	5.5	6.3	7.0	7.6	8.2	8.8	9.4	9.8	9.5	9.5	9.1	8.4	7.2	6.5	6.2	6.0	5.7	5.3	6.9
Baker City, Oreg.	4.8	5.6	6.0	6.7	6.5	6.3	5.9	5.7	5.5	6.0	6.0	5.9	5.9	7.0	7.8	8.2	7.9	8.2	8.1	7.4	6.7	5.5	5.1	4.8	6.4
Baltimore, Md.	4.5	4.6	4.7	4.7	4.3	4.4	4.6	5.1	6.2	6.8	6.2	6.5	7.5	7.3	7.7	8.0	7.3	6.8	6.5	5.8	5.3	5.2	5.1	4.8	5.8
Bismarck, N. Dak.	7.7	7.9	8.4	8.7	7.8	8.4	8.6	8.5	7.7	8.5	9.2	9.2	10.1	10.2	10.3	10.5	10.8	10.8	9.9	8.6	7.6	8.0	8.1	7.8	8.9
Block Island, R. I.	15.1	15.5	16.4	16.4	15.9	16.5	16.0	16.9	17.2	17.6	17.5	17.9	18.0	18.6	17.9	16.9	16.4	16.1	14.9	14.0	15.0	16.4	16.5	16.4	16.5
Boston, Mass.	11.4	11.3	11.7	11.4	11.3	10.9	11.0	12.1	13.0	13.3	14.4	15.2	15.4	15.7	16.0	15.7	15.0	13.9	12.4	11.3	11.1	11.3	11.3	11.3	12.8
Buffalo, N. Y.	15.7	16.2	16.6	16.5	16.5	15.6	15.9	15.8	17.0	17.5	18.7	19.7	19.9	20.2	20.7	20.9	20.9	19.8	19.6	19.9	18.3	16.7	17.3	16.5	18.0
Cairo, Ill.	12.3	12.3	12.5	12.5	12.2	12.0	11.8	12.0	12.0	12.0	11.6	12.4	11.8	12.4	12.4	12.5	11.9	11.7	12.1	12.3	12.5	12.8	12.5	12.7	12.2
Cape Henry, Va.	13.3	14.1	13.6	13.9	13.8	13.5	13.3	14.1	14.8	14.2	14.1	13.7	13.8	14.1	13.1	12.8	12.2	11.4	11.6	11.9	11.0	13.9	13.1	12.2	13.3
Charleston, S. C.	9.0	8.6	8.5	8.9	8.5	9.1	9.4	9.5	11.6	12.6	14.6	14.3	15.1	14.4	15.1	15.0	14.9	13.5	12.2	11.9	11.1	10.4	10.1	9.2	11.6
Charlotte, N. C.	6.9	6.4	6.4	6.5	6.9	7.0	6.6	6.7	8.3	9.1	9.6	9.7	9.8	10.5	9.7	9.5	9.7	8.8	7.2	7.0	7.2	7.5	7.3	7.1	8.0
Chattanooga, Tenn.	9.1	8.6	8.1	8.1	7.4	7.5	7.9	8.2	9.3	10.0	10.6	10.3	11.4	11.3	11.2	11.0	10.3	9.8	9.3	8.9	9.3	9.3	9.4	9.0	9.4
Cheyenne, Wyo.	10.3	10.6	10.1	11.5	11.5	11.5	10.8	11.0	11.1	11.5	12.9	13.6	14.4	15.4	15.9	15.5	15.3	15.8	16.9	14.2	10.8	10.8	11.4	10.8	12.7
Chicago, Ill.	19.1	18.8	17.7	18.1	17.5	18.2	18.0	19.0	19.1	18.9	18.8	18.7	20.0	20.6	21.1	22.2	21.5	20.4	20.4	19.5	20.0	19.5	19.1	18.7	19.4
Cincinnati, Ohio.	8.7	8.3	8.1	8.2	8.2	8.6	9.0	9.5	10.5	10.8	10.5	11.1	11.1	11.2	11.4	11.6	11.2	10.2	10.3	10.0	10.3	9.6	9.0	8.8	9.8
Cleveland, Ohio.	17.2	17.8	19.0	18.4	18.1	16.5	16.5	16.5	16.1	15.8	16.8	16.9	17.7	18.4	18.1	18.2	17.1	15.9	15.6	15.6	14.9	15.4	15.7	15.6	16.8
Columbia, Mo.	11.6	10.8	10.3	10.4	10.9	10.3	10.3	10.3	11.4	12.6	13.2	13.1	13.0	13.4	13.0	12.8	12.6	12.0	11.5	10.2	10.1	11.0	11.5	11.4	11.6
Columbus, Ohio.	9.3	8.8	8.7	8.5	8.6	8.4	8.1	9.0	10.0	10.0	10.7	11.0	11.5	11.3	11.1	10.9	10.9	10.4	9.7	8.9	9.2	8.9	8.9	9.1	9.7
Concordia, Kans.	8.7	8.4	8.6	8.3	7.7	7.6	7.1	7.1	7.9	9.0	9.7	10.5	10.3	10.6	10.8	10.7	10.8	10.4	10.0	9.1	8.2	8.3*	8.6	8.7	9.0
Corpus Christi, Tex.	12.5	11.9	12.5	12.4	12.1	12.5	11.9	11.1	11.4	12.6	13.4	14.6	15.5	15.3	15.6	16.2	16.1	15.3	15.5	14.5	14.3	14.4	13.5	12.6	13.6
Davenport, Iowa.	8.5	8.6	8.7	8.9	8.8	8.8	8.7	8.8	9.4	9.9	10.5	10.9	11.3	12.0	12.0	11.8	11.3	10.9	10.1	8.9	8.6	9.4	9.6	9.6	9.8
Denver, Colo.	8.4	7.5	7.6	8.1	7.1	7.2	7.2	7.8	7.3	6.9	6.9	8.3	8.7	10.1	10.8	10.9	10.2	10.9	12.4	10.9	9.8	9.0	8.1	9.1	8.8
Des Moines, Iowa.	9.0	9.2	8.6	8.7	8.5	7.5	7.8	7.7	8.8	9.9	10.5	10.7	11.5	11.6	12.2	12.6	12.1	12.2	11.5	10.1	9.9	10.1	10.1	9.5	10.0
Detroit, Mich.	9.8	9.4	9.1	8.9	8.8	9.3	9.3	9.7	10.4	11.3	12.4	12.8	13.6	13.6	13.5	12.9	12.9	12.9	12.4	11.7	11.8	10.8	10.7	10.4	11.2
Dodge City, Kans.	12.7	11.5	10.4	9.9	9.6	9.8	10.3	10.2	11.0	12.8	14.2	14.0	14.5	15.2	15.3	16.4	16.1	15.8	15.5	13.7	12.9	13.0	14.0	13.5	13.0
Dubuque, Iowa.	6.9	6.5	6.8	6.6	6.8	7.2	6.7	6.5	7.0	7.8	8.5	8.9	9.9	10.6	10.5	10.8	10.1	9.7	8.9	8.5	7.6	8.0	7.3	6.8	8.1
Duluth, Minn.	8.5	9.5	9.9	9.6	10.2	9.6	10.0	10.0	10.3	10.5	10.6	10.9	11.5	11.3	11.7	11.8	11.9	11.1	11.0	10.0	10.1	9.5	9.4	9.7	10.4
Eastport, Me.	12.5	12.0	11.7	11.8	11.2	11.8	11.6	12.4	13.1	12.7	13.0	12.5	12.7	13.0	13.9	14.4	14.8	14.2	14.1	14.0	14.8	14.7	13.9	13.3	13.1
El Paso, Tex.	15.3	14.6	12.5	11.4	11.8	10.3	10.2	9.8	10.9	10.3	10.5	12.9	16.0	19.7	22.0	23.6	24.7	24.5	24.0	21.0	18.9	16.8	15.7	15.0	15.9
Erie, Pa.	13.5	14.1	13.9	14.9	15.2	15.5	14.0	13.9	14.3	14.8	15.1	15.3	16.0	15.9	15.8	15.2	14.9	14.0	13.2	12.3	11.9	11.8	12.3	13.0	14.2
Eureka, Cal.	8.1	7.4	7.3	6.3	6.4	6.0	6.4	6.4	6.5	6.7	6.4	6.8	7.7	8.2	9.5	10.8	11.2	11.3	11.9	11.6	11.1	10.3	9.8	8.4	8.4
Fort Canby, Wash.	14.8	15.9	16.0	16.7	17.0	18.2	18.7	18.2	17.1	17.1	17.2	18.5	18.8	18.7	18.3	16.9	17.0	15.7	15.7	15.9	14.6	15.4	13.8	14.4	16.7
Fort Smith, Ark.	8.1	8.8	8.9	8.6	9.2	9.2	9.1	9.6	9.9	10.6	10.5	10.4	11.2	10.5	10.2	10.2	10.3	10.3	10.0	8.9	8.6	8.7	9.2	8.9	9.6
Fresno, Cal.	5.6	5.8	5.8	5.4	5.4	5.6	5.3	4.8	5.0	4.7	4.5	5.8	6.8	7.1	7.4	7.7	7.9	8.0	8.3	8.5	7.3	5.8	5.5	5.1	6.2
Galveston, Tex.	11.5	11.5	11.9	11.9	12.0	11.6	11.2	10.6	10.7	11.4	11.9	12.5	13.1	12.6	12.8	12.5	12.5	12.4	13.0	12.3	11.3	10.9	11.5	11.2	11.9
Grand Haven, Mich.	9.6	9.6	10.0	10.3	9.7	9.9	9.9	9.5	11.3	11.7	12.9	13.4	13.5	13.6	13.7	13.4	13.5	13.7	12.5	11.5	11.5	11.1	10.2	10.1	11.5
Greenbay, Wis.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hannibal, Mo.	9.0	9.0	9.5	10.3	9.7	9.8	9.2	8.7	8.5	10.0	11.2	11.9	12.8	12.8	12.6	13.0	12.5	12.4	11.5	10.0	9.6	9.7	9.7	9.8	10.6
Harrisburg, Pa.	8.0	7.9	7.4	7.7	7.9	7.1	6.6	7.7	8.3	8.9	8.9	9.2	10.1	10.4	10.7	10.3	9.7	9.2	8.7	8.5	9.5	9.3	8.7	8.3	8.7
Hatteras, N. C.	14.2	13.9	14.4	14.3	14.8	15.0	15.1	15.5	16.3	16.4	16.5	16.5	16.6	15.9	15.6	16.1	15.4	15.0	14.1	13.8	13.6	13.1	13.5	14.4	15.0
Havre, Mont.	7.3	8.0	6.7	6.2	6.9	6.6	6.5	7.1	7.1	7.7	8.2	9.2	10.6	11.4	11.0	11.6	11.7	11.5	11.5	11.4	10.0	8.9	8.3	7.5	8.9
Helena, Mont.	6.4	6.2	5.8	6.0	6.1	5.8	5.3	4.8	4.7	5.3	5.2	5.7	6.1	5.4	5.9	6.4	6.6	6.5	6.5	6.6	6.1	6.5	6.0	5.5	5.9
Huron, S. Dak.*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Idaho Falls, Idaho.	10.4	9.7	10.1	10.2	10.6	10.5	10.5	10.7	11.1	11.5	12.4	13.7	13.4	14.5	15.3	15.1	14.8	13.9	13.5	12.3	11.3	10.9	11.5	11.2	12.0
Indianapolis, Ind.	11.1	10.9	10.8	10.9	11.0	11.5	11.5	12.2	11.8	13.7	14.3	14.5	14.7	14.6	14.1	14.5	14.7	15.0	13.8	12.6	13.0	13.0	12.7	12.7	12.9
Jacksonville, Fla.	6.8	7.0	7.5	7.5	7.8	7.0	6.9	7.5	9.2	10.7	11.2	11.4	11.5	12.5	12.8	12.5	12.7	11.6	10.4	9.4	8.1	7.7	7.4	6.9	9.3
Jupiter, Fla.	10.0	10.1	10.0	9.8	10.0	9.7	9.0	9.1	10.9	12.4	12.5	13.3	13.6	13.8	14.0	13.5	12.6	12.0	11.0	10.6	10.9	10.5	10.5	10.3	11.3
Kansas City, Mo.	8.1	8.5	8.6	7.8	7.6	8.1	8.2	9.0	9.2	10.1	9.8	10.3	10.9	11.2	10.6	10.6	10.6	10.3	9.7	9.0	9.5	9.1	8.7	8.3	9.3
Keokuk, Iowa.	8.1	8.4	8.2	8.2	7.7	7.6	7.6	7.7	7.7	8.9	9.4	10.9	10.5	10.4	10.7	10.5	10.2	10.4	9.4	8.6	8.8	8.7	8.9	8.7	9.0
Key West, Fla.	9.6	9.5	9.5	9.4	9.6	9.6	9.3	10.1	11.2	12.3	12.7	12.9	12.5	12.6	12.2	11.8	11.7	11.5	10.6	10.6	10.7	10.4	10.1	9.5	10.8
Kittyhawk, N. C.	15.0	15.7	16.3	16.3	16.0	16.0	16.1	16.4	15.7	15.9	16.0	16.4	17.0	18.2	18.0	17.6	16.4	14.6	13.8	14.3	15.7	14.7	15.0	14.9	15.9
Knoxville, Tenn.	5.7	5.8	5.8	5.5	5.6	6.0	5.6	6.0	6.0	7.8	8.2	8.1	8.4	9.2	9.5	8.8	8.4	7.8	7.3	6.2	5.8	6.0	6.0	5.4	6.9
La Crosse, Wis.	5.7	6.3	6.5	6.0	6.3	5.9	5.8	5.9	6.3	7.1	7.9	8.4	8.7	9.3	9.5	10.0	9.6	9.6	8.5	7.6	7.1	6.0	6.8	6.6	7.4
Lander, Wyo.	5.7	5.3	5.0	4.0	3.6	3.4	3.3	3.9	3.5	3.6	4.7	5.3	6.2	7.3	7.7	8.6	9.3	8.7	8.5	8.6	7.5	6.3	5.8	5.8	5.9
Lexington, Ky.	14.0	14.8	15.3	15.3	15.9	15.9	15.5	16.0	16.5	17.1	17.3	17.0	16.4	16.7	16.5	16.5	15.7	14.2	13.9	13.6	13.6	14.5	14.6	14.3	15.5
Little Rock, Ark.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Los Angeles, Cal.	3.2	3.3	3.6	3.8	3.7	4.2	3.9	4.0	4.1	4.5	4.6	5.0	5.0	6.0	6.6	7.8	9.1	9.5	9.5	8.8	6.8	4.7	3.4	3.2	5.3
Louisville, Ky.	9.2	9.1	10.0	9.6	9.6	9.4	9.5	9.9	11.3	11.9	11.9	11.6	11.9	12.6	13.1	13.1	12.1	11.5	10.5	10.4	10.7	10.8	10.4	9.4	10.8
Lynchburg, Va.	4.1	4.1	4.4	3.6	3.6	3.8	3.4	3.7	5.0	5.7	5.7	6.2	6.6	7.6	8.0	7.7	7.7	7.6	6.5	5.1	4.7	4.3	4.0	4.0	5.3
Marquette, Mich.	8.0	8.0	8.2	7.6	8.1	7.3	8.0	8.5	9.0	9.8	10.3	10.8	11.9	12.2	12.7	12.0	11.9	11.6	9.7	8.5	8.3	8.1	7.9	8.0	9.4
Memphis, Tenn.	13.8	13.9	14.3	13.6	13.5	13.9	14.0	14.6	14.0	13.8	14.3	14.1	13.9	13.4	13.3	13.4	13.4	12.6	11.9	10.9	10.9	11.7	12.6	13.5	13.3
Milwaukee, Wis.	10.3	11.0	11.1	10.8	11.0	10.8	10.9	10.2	10.6	11.3	11.8	12.5	13.5	13.7	13.1	13.5	13.2	13.0	12.0	10.6	10.5	10.5	10.5	10.0	11.5
Mobile, Ala.	8.2	8.1	8.4	7.7	7.1	6.6	6.7	7.0	7.1	9.1	9.2	10.2	11.7	12.9	12.6	12.6	12.4	11.9	10.9	9.7	8.6	8.5	9.1	9.1	9.4
Montgomery, Ala.	7.6	7.9	7.7	8.0	7.3	7.1	6.7	6.8	7.8	8.9	9.2	9.5	10.0	9.9	9.7	10.3	9.7	8.5	7.7	7.6	7.9	8.3	8.1	7.9	8.3
Moorhead, Minn.	10.5	11.1	11.0	11.0	11.1	11.5	11.4	11.5	11.5	11.5	12.5	12.7	13.0	13.1	13.2	12.5	12.4	11.5	11.2	10.7	10.6	10.4	10.4	10.0	11.5
Nantucket, Mass.	13.1	12.5	12.8	12.6	13.0	12.6	12.4	13.1	13.9	13.7	14.2	14.9	15.5	14.8	14.9	14.5	14.0	14.0	13.1	13.1	13.1	13.1	13.3	12.7	13.5
Nashville, Tenn.	9.3	9.8	9.9	9.8	9.1	8.9	9.1	9.3	10.4	10.9	11.1	10.9	11.5	12.2	12.3	12.0	11.7	11.3	9.7	8.9	8.5	8.4	9.0	8.8	10.1
New Haven, Conn.	7.9	8.3	8.1	8.4	8.0	8.4	8.7	10.0	11.2	12.3	12.4	12.8	13.0	13.6	13.1	13.0	12.1	10.6	8.5	8.5	9.5	10.0	10.0	8.8	10.3
New Orleans, La.	9.6	9.5	8.5	8.9	8.2	7.7	8.6	9.1	9.6	10.8	11.5	12.5	13.0	13.6	13.8	13.4	13.2	11.5	11.7	10.5	10.0	9.7	9.7	9.6	10.6
New York, N. Y.	15.0	14.7	13.1	14.4	15.1	15.2	15.5	15.3	15.7	16.6	16.8	16.8	15.7	16.6	16.6	16.9	17.3	17.1	16.2	14.9	14.7	15.0	14.4	14.6	15.6
Norfolk, Va.	8.5	8.2	8.3	8.0	8.1	7.6	8.3	8.8	10.1	11.4	10.9	10.5	11.3	11.4	10.8	10.4	10.4	9.7	9.4	8.6	9.4	9.4	8.4	7.8	9.4
Northfield, Vt.	7.9	8.5	9.0	8.5	7.5	7.1	7.7	7.9	10.4	11.5	13.1	14.6	15.0	15.2	14.8	14.1	13.6	11.9	9.7	8.2	8.4	8.0	7.7	7.3	10.3
North Platte, Nebr.	9.5	9.5	9.6	8.9	9.1	8.6	9.5	9.5	9.1	10.0	11.1	11.5	12.5	13.2	13.0	13.5	13.0	12.1	11.5	10.1	9.4	9.3	9.9	9.0	10.5
Oklahoma, Okla.	9.5	9.5	9.7	9.5	9.9	9.9	8.9	8.9	9.1	10.5	10.9	10.7	10.5	10.9	10.9	11.3	11.4	11.7	10.7	8.7	9.1	8.8	9.3	9.5	10.0
Omaha, Nebr.	8.9	8.4	8.0	7.8	8.3	8.3	8.2	8.4	8.9	9.8	10.4	10.1	11.5	11.8	11.9	11.6	11.1	10.7	9.9	9.4	9.0	8.6	8.8	9.2	9.5
Oswego, N. Y.	13.6	14.2	13.9	14.2	14.2	14.4	14.1	15.0	15.1	15.4	15.7	14.7	15.1	14.3	14.4	14.2	14.2	14.8	13.7	13.6	13.3	13.3	13.1	13.3	14.2
Palestine, Tex.	8.5	8.6	8.8	9.1	8.6	8.4	7.8	7.9	8.7	10.0	10.6	10.6	10.5	10.9	10.7	10.3	10.1	9.5	8.7	7.5	7.0	7.2	8.1	7.9	9.0
Parkersburg, W. Va.	5.7	6.1	6.4	6.0	6.5	6.0	6.4	6.7	7.7	8.4	8.7	8.8	10.1	10.5	10.5	10.2	9.2	8.2	7.7	7.0	5.7	6.2	5.8	6.2	7.5
Pensacola, Fla.	11.9	11.4	11.5	11.0	10.2	9.5	9.6	9.7	10.5	10.9	11.9	12.5	13.7	13.9	13.2	13.5	13.5	13.5	12.7	12.1	11.6	12.2	12.4	12.8	11.9

*Record incomplete.

TABLE VII.—*Average wind movement, etc.*—Continued.

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Philadelphia, Pa.....	10.3	10.5	10.1	9.3	9.3	9.4	9.7	11.0	11.7	11.8	11.8	11.7	11.7	12.6	12.9	11.9	11.7	11.5	10.5	10.2	10.1	10.3	10.1	10.3	10.9
Phœnix, Ariz.....	3.6	3.7	3.7	3.7	3.8	3.8	3.7	4.4	4.2	4.3	4.4	5.2	5.1	5.5	5.9	6.9	7.4	7.3	7.5	6.8	4.9	4.0	3.6	3.4	4.9
Pierre, S. Dak.....	9.5	9.3	9.5	9.3	8.5	9.4	9.7	9.6	9.7	10.1	10.2	10.2	10.9	11.2	11.5	11.7	11.6	11.5	11.9	12.1	11.3	10.3	9.8	9.5	10.3
Pittsburg, Pa.....	6.8	7.2	7.8	7.3	7.1	7.3	8.2	7.3	7.8	8.2	8.2	8.1	8.9	8.9	9.6	9.1	9.1	8.3	7.0	6.3	6.5	7.1	7.3	7.3	7.8
Port Angeles, Wash.	5.4	5.4	5.5	5.6	5.8	6.3	6.1	6.9	6.5	6.3	5.5	4.0	4.6	5.7	6.8	7.9	8.4	7.8	8.5	8.4	6.5	5.7	5.7	5.3	6.3
Port Huron, Mich....	11.5	11.2	11.4	11.1	10.8	10.3	10.1	10.4	11.1	12.7	13.1	14.0	14.6	14.7	15.2	14.7	14.4	13.9	13.0	12.5	13.0	12.0	11.5	10.8	12.4
Portland, Me.....	6.0	6.2	6.3	5.9	6.1	6.3	6.8	7.3	7.9	8.3	8.6	9.4	8.9	9.4	10.1	10.3	9.5	9.2	7.9	7.4	7.1	7.1	6.8	6.3	7.7
Portland, Oreg.....	8.9	9.8	10.7	10.9	11.7	10.9	10.7	10.8	10.2	10.2	11.3	11.3	12.6	12.6	13.2	14.0	12.9	12.6	12.2	11.4	11.1	10.6	9.5	9.3	11.2
Pueblo, Colo.....	7.0	7.0	6.9	6.9	6.9	6.9	6.9	6.1	5.6	5.4	6.6	8.9	10.3	10.2	11.4	12.5	14.9	16.2	15.5	14.2	12.5	12.2	9.6	7.9	9.5
Raleigh, N. C.....	6.2	6.2	6.2	6.2	6.3	6.2	5.8	6.1	6.9	7.9	8.7	8.7	9.4	9.1	9.0	9.3	8.9	7.4	6.0	6.2	6.4	7.0	7.1	6.4	7.2
Rapid City, S. Dak...	6.6	6.8	6.9	5.7	6.5	6.5	6.5	6.3	6.3	6.2	6.4	7.0	8.5	9.5	9.6	10.3	10.4	10.8	10.5	9.6	7.8	6.2	6.5	6.5	7.7
Redbluff, Cal.....	8.5	8.8	8.8	8.7	8.2	7.5	7.1	7.7	7.3	6.7	7.0	8.3	10.2	10.3	10.0	10.2	10.5	10.2	10.3	10.8	9.7	9.8	9.5	9.1	9.0
Rochester, N. Y.....	8.7	8.9	8.3	8.1	8.6	8.8	8.6	9.5	10.4	10.9	10.9	11.2	12.6	12.9	13.2	12.4	11.9	11.1	10.0	10.2	10.1	9.6	9.1	8.8	10.2
Roseburg, Oreg.....	3.0	3.6	3.5	4.0	3.3	3.7	3.5	3.8	3.7	3.7	4.1	4.4	4.7	5.7	6.5	6.8	7.4	7.3	7.0	6.7	6.5	4.6	4.3	3.7	4.8
Sacramento, Cal.....	9.9	9.8	9.9	11.0	10.6	10.4	9.9	9.3	9.5	9.6	9.5	10.6	12.2	11.9	12.5	12.8	12.5	11.8	12.5	11.8	10.3	10.2	9.8	10.3	10.8
St. Louis, Mo.....	10.1	11.0	10.5	10.1	10.0	9.7	10.1	9.5	10.1	10.5	10.7	11.8	12.3	12.7	13.6	13.7	13.6	12.7	12.7	11.6	11.5	11.2	11.8	11.4	11.4
St. Paul, Minn.....	6.9	7.0	6.9	7.3	7.2	7.2	7.3	7.7	8.1	8.3	9.1	9.4	9.5	9.5	10.2	9.6	9.6	9.5	8.5	7.7	7.3	7.4	6.9	6.8	8.1
Salt Lake City, Utah.	5.9	5.2	5.3	5.4	5.7	6.0	6.1	5.3	4.9	5.3	7.3	7.6	9.2	10.5	11.7	11.4	10.5	10.6	10.0	8.6	7.5	6.0	5.6	5.5	7.4
San Antonio, Tex.....	9.8	8.5	9.2	8.1	8.2	8.0	8.2	7.5	7.9	9.3	10.9	11.9	12.4	12.0	11.8	10.7	10.3	10.6	10.5	9.6	10.5	10.4	10.7	10.5	9.9
San Diego, Cal.....	3.7	4.2	4.1	4.7	4.5	4.7	5.0	5.5	5.2	4.8	4.6	5.1	5.9	7.2	8.5	9.5	9.6	9.9	9.6	8.8	7.4	5.3	4.3	3.9	6.1
Sandusky, Ohio.....	11.2	11.3	11.3	11.2	10.8	10.7	10.7	10.4	10.6	11.2	12.4	12.8	13.5	13.2	13.0	13.5	12.8	12.6	12.2	12.2	12.3	11.5	11.4	11.4	11.8
San Francisco, Cal...	9.7	9.7	9.3	9.2	8.8	8.2	7.8	8.5	7.8	8.2	9.0	9.3	10.3	10.3	10.8	12.4	15.8	17.4	18.1	17.6	15.9	13.5	12.0	10.9	11.3
San Luis Obispo, Cal.	4.1	4.2	4.3	4.7	4.2	4.2	4.1	4.4	4.8	5.1	5.0	5.4	7.1	7.8	8.4	10.0	10.6	11.3	11.0	10.4	8.0	4.8	3.9	3.8	6.3
Santa Fe, N. Mex.....	5.9	6.1	6.1	5.6	5.0	5.5	6.5	6.3	5.7	6.9	8.5	9.5	10.7	11.6	12.5	13.4	13.5	13.3	13.1	12.1	8.2	7.5	7.0	6.0	8.6
Sault Ste Marie, Mich.	8.9	8.3	8.0	8.0	7.8	7.5	7.3	7.1	8.0	8.8	9.6	10.0	10.2	11.0	12.1	12.0	12.4	12.1	12.4	11.0	9.9	10.5	9.8	9.7	9.7
Savannah, Ga.....	7.3	7.0	6.4	6.2	7.0	7.1	7.5	7.8	9.4	10.5	11.1	11.1	11.5	11.7	11.9	12.0	11.9	10.5	9.7	9.4	8.7	8.3	8.2	7.7	9.2
Seattle, Wash.....	6.9	6.2	6.5	6.8	6.9	6.8	7.1	7.1	7.0	6.6	7.0	7.6	7.9	8.4	9.4	10.3	10.2	9.7	9.4	8.7	8.2	7.5	7.4	7.1	7.8
Shreveport, La.....	8.5	8.9	8.6	8.4	8.4	7.7	7.6	7.7	8.4	10.1	10.4	9.7	10.5	9.9	10.2	10.5	10.2	10.0	10.1	9.1	8.4	8.9	8.6	9.1	9.2
Sioux City, Iowa.....	12.0	13.1	12.2	13.0	13.0	12.8	12.4	12.4	12.8	13.6	14.9	15.2	16.0	16.5	17.3	17.6	17.0	16.5	15.1	14.1	14.2	14.7	13.9	13.2	14.3
Spokane, Wash.....	6.6	6.6	6.4	6.1	5.3	5.5	6.0	4.7	5.2	5.5	6.7	7.3	8.1	8.7	9.3	9.6	9.6	9.3	8.5	7.8	6.2	5.9	6.0	6.4	7.0
Springfield, Ill.....	9.6	9.6	9.9	10.3	10.7	10.9	10.4	10.6	11.0	11.5	11.8	12.4	12.6	13.2	13.6	13.1	12.5	12.1	11.2	10.2	9.8	10.7	11.1	10.4	11.2
Springfield, Mo.....	13.7	13.6	13.0	12.5	12.5	12.8	13.0	13.6	13.9	15.2	15.8	15.9	15.6	14.9	14.2	13.8	14.3	13.2	13.1	11.7	12.7	14.2	13.1	13.0	13.7
Tampa, Fla.....	6.2	5.9	5.9	5.8	5.8	5.8	6.6	6.9	8.6	10.0	10.5	10.1	10.5	10.6	10.8	10.5	10.0	8.7	7.8	6.4	6.5	6.6	6.1	5.6	7.8
Tatoosh Island, Wash.	14.0	15.3	15.0	16.7	16.0	16.2	15.7	16.6	16.1	17.4	17.5	16.3	16.2	17.4	16.7	16.5	16.9	17.5	16.7	16.3	14.6	14.1	14.1	14.2	16.0
Toledo, Ohio.....	9.6	9.0	9.1	8.8	8.8	9.5	9.0	9.5	10.5	10.5	11.6	12.5	13.3	12.9	13.1	13.0	13.0	12.5	11.7	11.1	10.7	10.1	9.6	9.5	10.8
Vicksburg, Miss.....	10.5	9.9	9.3	9.1	9.3	9.6	9.6	9.5	9.6	9.5	10.0	10.0	10.2	10.0	10.1	10.8	10.4	9.5	9.1	8.9	8.6	8.8	9.5	9.8	9.7
Vineyard Haven, Mass	10.0	9.8	10.0	10.4	9.8	10.4	10.4	10.8	11.7	11.7	12.6	12.7	13.3	12.3	12.4	12.6	11.5	10.3	9.5	9.2	9.3	9.8	9.8	9.4	10.8
Walla Walla, Wash...	7.4	7.0	7.2	7.1	6.9	7.4	7.3	8.1	7.1	7.0	7.1	7.9	8.3	9.4	9.8	10.1	10.6	10.1	9.6	9.1	8.8	8.4	8.3	7.9	8.2
Washington, D. C.....	6.1	6.0	6.3	6.4	5.8	6.1	6.1	6.6	8.0	8.7	9.3	9.7	9.9	10.7	11.1	11.0	10.5	9.4	8.4	8.1	8.1	7.6	7.5	6.9	8.1
Wichita, Kans.....	10.3	10.7	10.1	9.9	9.8	9.9	9.4	9.5	9.9	11.0	11.3	11.7	11.7	11.9	12.3	12.4	11.6	11.7	11.5	9.9	8.9	9.8	10.2	10.4	10.7
Williston, N. Dak.....	8.1	7.4	7.1	7.0	6.5	6.4	5.8	5.6	5.5	5.9	6.4	6.5	8.1	9.8	10.0	10.5	10.5	10.0	9.5	9.7	8.5	8.5	8.0	8.0	7.9
Wilmington, N. C.....	8.0	7.8	6.8	6.9	7.2	7.1	6.8	7.9	9.7	10.8	12.4	12.0	12.1	12.8	13.0	12.8	12.0	10.6	9.5	8.8	8.8	8.6	7.7	8.0	9.5
Winnemucca, Nev....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Woods Hole, Mass....	16.6	16.3	16.9	16.8	16.4	15.7	15.6	15.5	16.3	16.8	17.6	18.1	18.1	17.9	17.6	18.5	18.6	17.5	15.3	15.5	16.7	16.5	16.2	15.2	16.8

TABLE VIII.—*Resultant winds from observations at 8 a. m. and 8 p. m., daily, during the month of March, 1897.*

Stations.	Component direction from—				Resultant.	
	N.	S.	E.	W.	Direction from—	Duration.
New England.	*Hours.*	*Hours.*	*Hours.*	*Hours.*	°	*Hours.*
Eastport, Me	23	14	13	25	n. 53 w.	15
Portland, Me	24	16	7	37	n. 68 w.	22
Northfield, Vt	24	32	3	8	s. 32 w.	9
Boston, Mass	27	11	9	29	n. 51 w.	26
Nantucket, Mass	23	17	10	26	n. 69 w.	17
Woods Hole, Mass.*	7	11	7	13	s. 56 w.	7
Block Island, R. I	22	15	12	29	n. 68 w.	18
New Haven, Conn	28	15	12	19	n. 28 w.	15
Middle Atlantic States.						
Albany, N. Y	24	20	3	21	n. 77 w.	18
Binghamton, N. Y†	9	10	7	11	s. 76 w.	4
New York, N. Y	22	16	16	24	n. 53 w.	10
Harrisburg, Pa	15	11	25	22	n. 37 e.	5
Philadelphia, Pa	22	14	16	24	n. 45 w.	11
Atlantic City, N. J	20	18	15	25	n. 79 w.	10
Baltimore, Md	20	0	28	21	n. 19 e.	21
Washington, D. C	25	19	18	14	n. 34 e.	7
Lynchburg, Va	18	25	13	23	s. 55 w.	12
Norfolk, Va	18	22	21	18	s. 37 e.	5
South Atlantic States.						
Charlotte, N. C	12	25	27	14	s. 45 e.	18
Hatteras, N. C	23	23	17	15	e.	2
Kittyhawk, N. C	24	17	21	20	n. 8 e.	7
Raleigh, N. C	18	24	12	18	s. 45 w.	8
Wilmington, N. C	17	21	16	21	s. 51 w.	6
Charleston, S. C	19	19	16	23	w.	7
Augusta, Ga	19	18	22	19	n. 72 e.	3
Savannah, Ga	20	20	19	15	e.	4
Jacksonville, Fla	19	21	22	14	s. 76 e.	8
Florida Peninsula.						
Jupiter, Fla	5	32	26	8	s. 17 e.	28
Key West, Fla	10	24	41	2	s. 70 e.	41
Tampa, Fla	14	20	21	20	s. 9 e.	6
Eastern Gulf States.						
Atlanta, Ga	16	17	26	17	s. 84 e.	9
Pensacola, Fla	8	32	21	15	s. 14 e.	25
Mobile, Ala	10	39	19	8	s. 21 e.	31
Montgomery, Ala	12	24	25	15	s. 40 e.	16
Vicksburg, Miss	13	32	27	9	s. 43 e.	26
New Orleans, La	9	35	25	6	s. 36 e.	32
Western Gulf States.						
Shreveport, La	13	29	23	15	s. 27 e.	18
Fort Smith, Ark	10	6	36	14	n. 80 e.	22
Little Rock, Ark	14	23	23	13	s. 48 e.	14
Corpus Christi, Tex	14	30	30	3	s. 59 e.	31
Galveston, Tex	8	42	16	11	s. 8 e.	34
Palestine, Tex	15	31	13	16	s. 11 w.	16
San Antonio, Tex	20	23	35	5	s. 84 e.	30
Ohio Valley and Tennessee.						
Chattanooga, Tenn	21	16	16	15	n. 11 e.	5
Knoxville, Tenn	26	9	13	27	n. 39 w.	22
Memphis, Tenn	17	21	26	11	s. 75 e.	16
Nashville, Tenn	19	25	17	11	s. 45 e.	8
Lexington, Ky	19	21	16	24	s. 76 w.	8
Louisville, Ky	16	17	20	17	s. 72 e.	3
Indianapolis, Ind	17	20	15	22	s. 67 w.	8
Cincinnati, Ohio	17	18	24	19	s. 79 e.	5
Columbus, Ohio	16	14	21	25	n. 63 w.	4
Pittsburg, Pa	12	22	15	28	s. 52 w.	16
Parkersburg, W. Va	22	17	17	16	n. 11 e.	5
Lower Lake Region.						
Buffalo, N. Y	17	16	17	25	n. 83 w.	8
Oswego, N. Y	16	25	14	21	s. 38 w.	11
Rochester, N. Y	15	20	17	28	s. 66 w.	12
Erie, Pa	13	15	20	23	s. 56 w.	4
Cleveland, Ohio	17	18	20	20	s.	1
Sandusky, Ohio	15	12	23	21	n. 34 e.	4
Toledo, Ohio	13	14	23	25	s. 63 w.	2
Detroit, Mich	20	15	21	20	n. 11 e.	5
Upper Lake Region.						
Alpena, Mich	18	13	20	25	n. 45 w.	7
Grand Haven, Mich	22	7	30	15	n. 45 e.	21
Marquette, Mich	31	13	14	18	n. 13 w.	18
Port Huron, Mich	23	15	16	24	n. 45 w.	11
Sault Ste. Marie, Mich	22	18	18	18	n.	4
Chicago, Ill	23	16	23	14	n. 52 e.	11
Milwaukee, Wis	23	11	20	20	n.	12
Greenbay, Wis	27	15	13	16	n. 14 w.	12
Duluth, Minn	35	10	18	18	n.	25
North Dakota.						
Moorhead, Minn	20	19	16	24	n. 83 w	8
Bismarck, N. Dak	27	10	23	18	n. 16 e.	18
Williston, N. Dak	32	14	17	10	n. 21 e.	19
Upper Mississippi Valley.						
St. Paul, Minn	19	14	22	27	n. 45 w.	7
La Crosse, Wis. †	16	6	3	9	n. 31 w.	12
Davenport, Iowa	18	8	25	23	n. 11 e.	10
Des Moines, Iowa	25	15	26	14	n. 50 e.	16
Dubuque, Iowa	22	13	22	22	n.	9
Keokuk, Iowa	22	14	24	18	n. 37 e.	10
Cairo, Ill	20	23	22	8	s. 78 e.	14
Springfield, Ill	16	24	20	20	s.	8
Hannibal, Mo. †	10	8	11	7	n. 63 e.	4
St. Louis, Mo	17	16	25	14	n. 85 e.	11
Missouri Valley.						
Columbia, Mo.*	11	9	12	8	n. 63 e.	4
Kansas City, Mo	22	19	27	8	n. 81 e.	19
Springfield, Mo	17	23	27	13	s. 67 e.	15
Lincoln, Nebr	26	17	29	7	n. 68 e.	24
Omaha, Nebr	31	15	20	14	n. 21 e.	17
Sioux City, Iowa†	13	8	11	5	n. 50 e.	8
Pierre, S. Dak	25	13	32	9	n. 62 e.	26
Huron, S. Dak	25	19	20	17	n. 27 e.	7
Yankton, S. Dak	26	7	27	20	n. 30 e.	20
Northern Slope.						
Havre, Mont	22	4	19	29	n. 29 w.	21
Miles City, Mont	33	13	19	13	n. 17 e.	21
Helena, Mont	15	11	1	45	n. 85 w.	44
Rapid City, S. Dak	24	13	21	22	n. 5 w.	11
Cheyenne, Wyo	21	18	7	28	n. 82 w.	21
Lander, Wyo	17	24	9	25	s. 66 w.	18
North Platte, Nebr	17	19	24	17	s. 74 e.	7
Middle Slope.						
Denver, Colo	21	23	20	11	s. 77 e.	9
Pueblo, Colo	20	13	16	24	n. 49 w.	11
Concordia, Kans	21	19	23	10	n. 81 e.	13
Dodge City, Kans	21	23	16	16	s.	2
Wichita, Kans	25	21	22	7	n. 75 e.	16
Oklahoma, Okla	18	28	18	14	s. 22 e.	11
Southern Slope.						
Abilene, Tex	19	24	19	14	s. 45 e.	7
Amarillo, Tex	11	28	11	19	s. 25 w.	19
Southern Plateau.						
El Paso, Tex	24	7	5	42	n. 66 w.	41
Santa Fe, N. Mex	19	22	13	25	s. 76 w.	12
Phœnix, Ariz	17	10	18	26	n. 49 w.	11
Yuma, Ariz	23	13	12	29	n. 60 w.	20
Middle Plateau.						
Carson City, Nev	13	27	5	30	s. 61 w.	29
Winnemucca, Nev	8	25	6	35	s. 60 w.	34
Salt Lake City, Utah	14	23	16	21	s. 29 w.	10
Northern Plateau.						
Baker City, Oreg	15	33	12	20	s. 24 w.	20
Idaho Falls, Idaho	13	40	4	8	s. 8 w.	27
Spokane, Wash	11	22	22	13	s. 39 e.	14
Walla Walla, Wash	5	48	8	9	s. 1 w.	43
North Pacific Coast Region.						
Fort Canby, Wash	11	14	22	25	s. 45 w.	4
Port Angeles, Wash.*	1	8	8	18	s. 55 w.	12
Seattle, Wash	9	38	15	11	s. 8 e.	29
Tatoosh Island, Wash	8	17	27	16	s. 51 e.	14
Portland, Oreg	9	34	11	21	s. 22 w.	27
Roseburg, Oreg	12	27	13	28	s. 45 w.	21
Middle Pacific Coast Region.						
Eureka, Cal	16	20	16	21	s. 51 w.	6
Redbluff, Cal	21	21	17	30	w.	3
Sacramento, Cal	20	28	9	21	s. 56 w.	14
San Francisco, Cal	11	13	3	3	s. 87 w.	36
South Pacific Coast Region.						
Fresno, Cal	25	9	13	34	n. 53 w.	26
Los Angeles, Cal	20	13	16	28	n. 60 w.	14
San Diego, Cal	21	13	13	31	n. 66 w.	20
San Luis Obispo, Cal	21	10	3	34	n. 70 w.	33

* From observations at 8 p. m. only. † From observations at 8 a. m. only.

TABLE IX.—*Thunderstorms and auroras, March*, 1897.

States.	No. of stations.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total. No.	Total. Days.	
Alabama	50	T.	....	1	1	....	4	3	....	....	1	3	4	6	2	2	....	....	....	....	2	....	3	3	2	1	....	....	....	....	1	1	4	44	18	T.
		A.	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Arizona	49	T.	....	....	2	....	....	....	....	....	....	....	....	....	....	....	2	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	7	4	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Arkansas	50	T.	2	4	3	2	9	....	1	1	3	2	5	....	3	....	2	3	2	5	3	....	2	4	1	1	....	....	....	....	....	4	6	68	22	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
California	197	T.	2	....	....	....	2	1	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	....	....	1	....	....	....	9	7	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Colorado	71	T.	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	2	1	1	....	....	8	5	T.
		A.	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....	....	....	3	3	A.
Connecticut	14	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	9	....	....	....	....	....	....	....	9	1	T.
		A.	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	A.
Delaware	4	T.	....	....	2	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	5	4	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Dist. of Columbia	4	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Florida	38	T.	....	1	2	2	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	5	1	....	1	....	....	....	....	....	2	1	17	10	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Georgia	50	T.	....	....	7	....	3	....	1	....	....	3	5	5	6	5	....	....	....	....	4	1	1	4	4	....	1	....	....	....	1	4	55	16	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Idaho	36	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	5	....	....	....	....	1	....	7	3	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Illinois	97	T.	..	4	....	8	9	....	3	35	25	1	7	....	....	....	....	....	3	5	20	....	6	15	3	....	....	....	....	1	....	3	26	174	17	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	2	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	2	A.
Indiana	49	T.	....	2	....	6	10	2	....	18	20	....	....	....	....	....	....	....	....	....	1	2	1	13	8	....	....	....	....	....	1	....	2	86	13	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Indian Territory	7	T.	....	1	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	2	..	1	....	8	6	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Iowa	101	T.	....	....	....	4	3	1	22	33	2	....	....	....	....	1	....	....	....	5	20	....	1	..	....	....	....	....	....	1	....	....	19	112	12	T.
		A.	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	1	....	....	....	....	....	....	5	3	A.
Kansas	73	T.	....	....	....	10	1	1	2	9	1	....	2	....	....	....	....	2	1	16	11	3	....	....	1	....	....	....	....	10	2	22	4	98	17	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Kentucky	47	T.	....	2	3	3	8	1	....	7	17	3	4	2	2	2	....	....	....	....	2	....	1	9	7	....	....	....	....	....	....	2	12	87	18	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Louisiana	51	T.	....	....	1	1	9	6	7	2	2	1	4	3	2	1	6	....	....	....	14	1	6	11	2	....	....	....	....	8	6	3	11	107	22	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Maine	13	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	2	1	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Maryland	31	T.	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	1	....	6	4	9	....	....	....	4	3	1	2	17	5	A.
		A.	....	....	....	7	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	25	7	T.
Massachusetts	27	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....	....	....	....	2	2	A.
		A.	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	..	1	....	....	....	....	....	4	3	T.
Michigan	96	T.	....	....	....	....	....	....	....	20	17	....	1	....	....	....	....	....	....	....	4	9	....	11	....	....	....	....	....	1	....	....	....	5	2	A.
		A.	....	....	1	....	....	....	....	....	....	1	....	1	....	1	....	....	....	....	....	1	....	4	....	....	....	1	2	2	1	1	1	62	6	T.
Minnesota	69	T.	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	2	10	....	....	....	....	....	....	....	1	5	3	....	1	16	11	A.
		A.	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	1	9	3	A.
Mississippi	45	T.	....	2	3	2	8	2	2	2	3	3	8	7	6	4	5	2	2	2	9	1	5	8	1	....	....	....	....	....	3	3	11	104	25	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	1	A.
Missouri	96	T.	5	18	3	35	6	....	3	32	15	1	16	1	....	....	1	....	2	9	19	5	3	7	4	....	....	....	....	5	3	20	37	250	23	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Montana	40	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	1	T.
		A.	....	1	1	....	....	....	1	....	....	....	....	1	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	2	....	1	2	11	10	A.
Nebraska	112	T.	....	....	2	2	1	1	10	5	....	....	....	....	1	....	....	1	1	16	3	....	....	....	....	....	....	....	1	3	1	29	3	80	17	T.
		A.	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	A.
Nevada	39	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
New Hampshire	23	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	T.
		A.	....	....	....	5	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	2	1	2	2	16	7	A.
New Jersey	54	T.	....	....	13	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	1	7	....	....	....	....	....	....	....	25	5	T.
		A.	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	A.
New Mexico	1	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	5	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	7	3	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
New York	93	T.	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	31	....	10	....	....	....	....	....	....	....	....	....	....	42	3	T.
		A.	....	....	....	5	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	1	....	1	13	5	A.
North Carolina	60	T.	....	....	1	....	11	13	....	....	1	9	1	7	5	12	....	1	....	....	2	....	1	....	4	....	....	....	....	....	....	....	3	71	14	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
North Dakota	39	T.	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	1	....	1	1	....	8	5	T.
		A.	3	....	9	6	3	....	....	3	....	....	1	1	....	....	....	....	....	....	1	5	9	1	....	1	....	1	3	....	....	1	48	15	A.
Ohio	140	T.	....	1	....	....	8	....	....	38	29	11	....	1	....	....	....	....	1	....	2	14	1	44	11	4	....	....	....	....	....	....	....	165	12	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Oklahoma	20	T.	....	....	....	3	....	....	....	1	..	....	....	....	....	....	....	1	....	2	1	....	....	....	....	....	....	....	....	....	....	5	....	13	6	T.
		A.	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	....	....	3	3	A.
Oregon	60	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	2	2	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Pennsylvania	93	T.	1	....	4	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	22	1	19	1	9	....	....	....	....	....	....	....	58	8	T.
		A.	....	....	....	3	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	3	A.
Rhode Island	6	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	T.
		A.	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	A.
South Carolina	42	T.	....	....	4	1	4	8	1	....	1	6	4	17	12	12	1	1	1	....	8	1	....	6	1	1	....	....	....	....	1	1	6	98	22	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
South Dakota	46	T.	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....	....	2	5	4	T.
		A.	....	....	1	1	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	5	5	A.
Tennessee	49	T.	....	3	16	2	20	2	....	1	12	11	10	11	17	8	1	....	....	....	5	....	....	6	5	8	....	....	....	....	1	3	14	156	20	T.
		A.	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	A.
Texas	91	T.	....	....	1	5	7	1	1	....	1	....	....	....	....	1	8	10	4	12	3	....	3	1	....	....	....	....	1	26	....	3	....	88	17	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Utah	32	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	....	2	2	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Vermont	13	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	3	1	T.
		A.	....	....	....	2	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	5	3	A.
Virginia	37	T.	....	....	....	....	3	1	....	....	1	....	1	1	....	1	....	....	1	....	....	....	1	....	4	7	....	....	....	....	....	....	....	21	10	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Washington	51	T.	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	2	2	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	1	1	1	1	1	1	8	8	A.
West Virginia	37	T.	....	....	....	....	....	....	....	....	1	1	1	....	....	....	....	....	....	....	2	....	....	7	6	....	....	....	....	....	....	....	....	18	6	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Wisconsin	58	T.	....	....	....	....	....	....	1	7	....	....	....	....	....	....	....	....	....	....	2	1	....	....	....	....	....	....	....	7	3	....	....	21	6	T.
		A.	....	....	5	1	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	1	8	....	....	....	....	....	1	1	....	....	....	19	7	A.
Wyoming	11	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....	....	....	4	1	T.
		A.	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	A.
Sums	2,603	T.	11	39	71	89	127	44	57	213	152	55	74	62	57	49	27	31	20	82	148	103	37	189	72	61	7	2	7	74	31	105	166	2,262	....	T.
		A.	3	1	24	37	5	0	5	4	0	1	3	7	3	1	1	0	0	1	0	2	7	31	1	2	3	3	8	21	10	7	9	200	....	A.

TABLE X.—*Hourly sunshine as deduced from sunshine recorders, March, 1897.*

Stations.	Instrument.	Percentages for each hour of local mean time ending with the respective hour.																Hours of sunshine.			
		A. M.								P. M.								Total.			
		5	6	7	8	9	10	11	Noon	1	2	3	4	5	6	7	8	Actual.	Possible.	Percent of possible.	Personal estimate.
																		Hours.	*Hours.*		
Albany, N. Y	T.	.....	50	33	45	58	62	73	73	70	67	64	61	58	43	49	.....	219.2	370.9	59	40
Atlanta, Ga	T.	.....	30	20	18	22	25	30	30	34	39	30	22	20	16	30	.....	95.1	372.3	26	22
Atlantic City, N. J	P.	.....	67	49	42	52	51	53	54	50	53	53	49	46	42	46	.....	184.0	371.4	50	41
Baltimore, Md	T.	.....	75	31	31	37	56	55	57	63	61	58	56	51	36	50	.....	184.9	371.4	50	43
Binghamton, N. Y	T.	.....	0	20	22	34	38	40	46	48	47	44	37	33	40	50	.....	140.0	370.8	38	37
Bismarck, N. Dak	P.	.....	0	43	49	59	65	68	68	65	63	64	63	59	55	38	.....	221.5	370.3	60	54
Boston, Mass	T.	.....	54	42	48	50	49	44	47	50	46	42	40	40	36	33	.....	164.9	370.8	44	39
Buffalo, N. Y.*	T.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39
Charleston, S. C.*	T.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
Chattanooga, Tenn	T.	.....	20	12	11	19	30	31	35	38	34	29	24	20	15	30	.....	93.2	372.1	25	30
Cheyenne, Wyo	P.	.....	50	61	61	63	65	66	65	57	65	61	57	45	37	46	.....	216.5	371.2	58	49
Chicago, Ill	T.	.....	46	35	42	50	58	63	60	59	61	53	45	40	31	30	.....	184.5	370.8	50	46
Cincinnati, Ohio	T.	.....	33	37	38	47	50	55	54	53	59	45	41	33	19	17	.....	164.1	371.4	44	35
Cleveland, Ohio	T.	.....	69	36	37	46	49	53	58	55	57	55	44	35	26	35	.....	170.2	370.8	46	42
Columbus, Ohio	T.	.....	50	33	27	35	38	38	44	40	42	37	32	24	20	20	.....	124.3	371.2	33	30
Denver, Colo	P.	.....	50	53	64	67	73	68	74	65	71	70	61	56	53	43	.....	239.1	371.2	64	43
Des Moines, Iowa	T.	.....	23	33	34	27	31	35	41	44	49	49	48	47	43	48	.....	148.9	370.8	40	37
Detroit, Mich	T.	.....	69	39	34	45	52	59	58	59	62	63	55	38	31	39	.....	183.7	370.8	50	39
Dodge City, Kans	P.	.....	50	58	57	63	63	63	66	62	60	60	58	55	42	28	.....	217.7	371.4	59	58
Dubuque, Iowa	T.	.....	23	29	31	37	41	38	43	48	49	50	45	40	36	35	.....	150.4	370.8	41	42
Eastport, Me	P.	.....	50	35	38	43	46	48	45	45	50	45	44	37	28	37	.....	156.2	370.7	42	35
Erie, Pa	T.	.....	69	33	37	39	54	64	63	65	67	66	48	39	28	35	.....	187.6	370.8	51	34
Eureka, Cal	P.	.....	0	28	35	38	52	54	49	56	51	50	48	39	21	13	.....	160.1	371.2	43	36
Fresno, Cal	T.	.....	55	39	40	64	74	74	73	72	71	71	63	63	49	48	.....	233.3	371.7	63	66
Galveston, Tex	P.	.....	29	26	26	30	35	45	46	42	38	34	40	39	23	31	.....	131.6	372.6	35	35
Helena, Mont	P.	.....	31	35	35	51	62	54	55	50	59	52	46	37	32	35	.....	175.9	370.3	48	43
Idaho Falls, Idaho	T.	.....	21	23	25	31	39	59	68	64	61	48	37	24	20	13	.....	153.9	370.9	41	40
Indianapolis, Ind	T.	.....	42	36	37	46	57	62	63	62	60	62	54	41	34	43	.....	190.6	371.2	51	36
Kansas City, Mo	P.	.....	42	34	29	44	43	42	47	44	47	52	53	44	40	52	.....	161.3	371.4	43	43
Little Rock, Ark	T.	.....	50	38	40	48	51	55	55	57	59	64	58	53	47	60	.....	194.7	372.1	52	41
Los Angeles, Cal	P.	.....	60	54	63	74	81	78	68	75	77	78	76	66	50	55	.....	260.8	372.3	70	57
Louisville, Ky	T.	.....	50	44	43	44	48	56	55	61	58	55	46	31	28	33	.....	176.3	371.4	47	32
Minneapolis, Minn	T.	.....	25	24	25	32	46	53	55	53	54	48	36	26	19	29	.....	145.8	370.7	39	.....
Nashville, Tenn	T.	.....	36	28	30	35	44	62	68	72	72	60	47	41	39	49	.....	186.5	371.9	50	38
New Orleans, La	T.	.....	25	15	16	16	22	25	30	35	42	34	29	22	23	34	.....	96.8	372.5	26	26
New York, N. Y	T.	.....	83	39	47	51	58	63	60	61	60	62	51	41	38	48	.....	195.5	371.2	53	42
Northfield, Vt	P.	.....	47	39	40	46	50	47	43	46	46	44	44	38	31	33	.....	158.5	370.7	43	32
Omaha, Nebr	P.	.....	33	31	26	31	35	40	40	42	49	50	51	50	55	57	.....	155.6	371.2	42	32
Philadelphia, Pa	T.	.....	92	53	47	55	54	69	68	69	67	62	63	57	44	43	.....	218.9	371.2	59	41
Phœnix, Ariz	P.	.....	78	66	70	80	83	86	84	85	85	90	89	86	85	80	.....	307.7	372.3	83	77
Pittsburg, Pa.*	T.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	34
Portland, Me	T.	.....	47	40	48	59	68	76	74	71	69	64	53	37	34	40	.....	213.7	370.7	58	43
Portland, Oreg	T.	.....	0	3	7	10	25	46	42	40	47	33	31	25	14	12	.....	100.4	370.3	27	31
Do	P.	...	0	3	8	11	26	33	31	33	36	30	32	27	14	12	.....	87.9	370.3	24	31
Raleigh, N. C	T.	.....	45	24	29	39	45	58	65	70	62	60	52	43	23	26	.....	177.0	371.9	48	36
Rochester, N. Y	T.	.....	64	36	32	33	39	42	45	59	58	54	45	46	40	45	.....	164.2	370.9	44	42
St. Louis, Mo	T.	.....	17	14	19	32	41	54	62	65	64	61	55	48	39	26	.....	172.0	371.4	46	32
St. Paul, Minn	P.	.....	44	31	31	39	47	40	28	38	42	44	47	39	33	31	.....	141.8	370.7	38	37
Salt Lake City, Utah	P.	.....	17	20	27	37	49	53	61	50	59	58	52	50	35	26	.....	170.3	371.2	46	20
San Diego, Cal	P.	.....	56	45	50	67	74	82	79	73	81	76	69	60	58	68	.....	253.7	372.3	68	57
San Francisco, Cal	T.	.....	42	42	48	58	66	70	75	74	77	76	72	63	30	20	.....	231.0	371.4	62	54
Santa Fe, N. Mex	P.	.....	36	62	75	78	83	80	83	82	83	77	78	73	51	30	.....	278.7	371.9	75	63
Savannah, Ga	P.	.....	33	21	34	47	46	47	45	42	46	39	41	40	33	35	.....	149.5	372.1	40	36
Seattle, Wash	T.	.....	17	16	26	33	48	59	73	71	68	57	42	44	20	8	.....	171.3	370.1	46	36
Spokane, Wash	P.	.....	0	18	28	39	48	60	62	62	59	59	57	37	24	20	.....	171.1	370.1	46	34
Tampa, Fla	T.	.....	33	46	44	51	74	80	84	80	82	75	63	42	55	46	.....	239.6	372.8	64	59
Vicksburg, Miss	T.	.....	78	33	34	46	57	69	74	73	66	65	54	45	30	39	.....	201.1	372.1	54	54
Washington, D. C	P.	.....	67	41	39	51	61	62	62	60	61	67	65	59	58	61	.....	213.6	371.4	58	49
Wilmington, N. C	T.	.....	50	30	35	48	60	64	70	71	63	57	52	40	24	30	.....	190.7	372.3	51	47

* Record incomplete.

TABLE XI.—*Accumulated amounts of precipitation for each 5 minutes, for storms in which the rate of fall equaled or exceeded 0.25 in any 5 minutes, or 0.75 in 1 hour during March, 1897, at all stations furnished with self-registering gauges.*

Station.	Date.	Total duration.		Total am't of precipitation.	Excessive rate.		Amount before excessive began.	Depths of precipitation (in inches) during periods of time as indicated.												
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
	1	2	3	4	5	6	7														
Atlanta, Ga	5-6	11.10 p.m.	10.15 a.m.	1.86	7.11 a.m.	7.50 a.m.	0.94	0.18	0.31	0.36	0.41	0.51	0.55	0.59	0.66	0.68	.....	.....	.....	.....	.....
Baltimore, Md	19-20	.....	.....	0.19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bismarck, N. Dak.†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.15	.....	.....	.....
Boston, Mass	24	.....	.....	1.14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buffalo, N. Y	20	5.25 a.m.	5.28 a.m.	0.79	5.25 a.m.	5.28 a.m.	0.00	0.79	....	....	.....	.....	.....	.....	.....	.....	.....	0.22	.....	.....	.....
Chicago, Ill.*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cincinnati, Ohio	4-5	7.15 p.m.	1.05 p.m.	4.97	1.55 a.m.	‡	0.84	0.05	0.10	0.15	0.19	0.22	0.25	0.29	0.33	0.36	0.39	0.42	0.54	0.67	0.76
	9	7.50 p.m.	9.30 p.m.	0.83	8.05 p.m.	8.35 p.m.	0.15	0.10	0.20	0.34	0.40	0.50	0.55	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland, Ohio†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Denver, Colo.†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Des Moines, Iowa	31	.....	.....	0.57	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Detroit, Mich	9	.....	.....	0.94	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.36	.....	.....	.....
Dodge City, Kans	22	.....	.....	0.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.27	.....	.....	.....
Duluth, Minn.†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Eastport, Me	12	.....	.....	0.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.30	.....	.....	.....
Galveston, Tex	5	1.32 p.m.	8.37 p.m.	1.98	6.55 p.m.	7.03 p.m.	1.33	0.15	0.28	0.31	0.35	0.40	0.46	0.54	0.58	0.61	0.66	0.71	0.81	1.01	1.10
Hatteras, N. C	16	.....	.....	0.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.20	.....	.....	.....
Indianapolis, Ind.*	4-5	4.05 p.m.	9.45 a.m.	3.23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.50§	.....	.....	.....
Jacksonville, Fla	23	.....	.....	1.42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.65	.....	.....	.....
Jupiter, Fla	2-3	6.00 p.m.	8.50 a.m.	3.30	6.07 a.m.	‡	0.73	0.21	0.31	0.43	0.52	0.70	0.73	0.75	0.75	0.76	0.80	1.04	1.50§	1.94§	2.37
Kansas City, Mo. *	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Key West, Fla	25	.....	.....	0.28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.22	.....	.....	.....
Louisville, Ky. *	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Los Angeles, Cal	2-3	.....	.....	0.81	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.22	.....	.....	.....
Memphis, Tenn	2-3	.....	.....	0.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.48	.....	.....	.....
Milwaukee, Wis.†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montgomery, Ala	5-6	8.05 p.m.	10.15 a.m.	4.81	5.42 a.m.	6.22 a.m.	2.53	0.04	0.09	0.13	0.17	0.36	0.66	1.11	1.31	1.54	1.67	2.01	2.18	.....	.....
Do	12	2.00 p.m.	6.10 p.m.	1.72	3.02 p.m.	3.57 p.m.	0.01	0.16	0.21	0.46	0.53	0.60	0.71	0.76	0.87	0.90	0.94	1.29	.....	.....	.....
Do	12	8.50 p.m.	11.57 p.m.	1.14	10.00 p.m.	10.15 p.m.	0.11	0.19	0.73	1.01	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nantucket, Mass	24	.....	.....	0.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.18	.....	.....	.....
Nashville, Tenn	31	5.15 p.m.	8.45 p.m.	1.24	7.00 p.m.	7.40 p.m.	0.30	0.06	0.14	0.16	0.22	0.40	0.65	0.74	0.80	0.82	0.84	0.87	.....	.....	.....
New Orleans, La	21	3.30 p.m.	7.55 p.m.	0.98	4.48 p.m.	5.53 p.m.	0.01	0.06	0.21	0.31	0.51	0.64	0.69	0.76	0.81	0.85	0.88	.....	.....	.....	.....
New York, N. Y	19-20	.....	.....	0.63	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.19	.....	.....	.....
Norfolk, Va	12	.....	.....	1.33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.34	.....	.....	.....
Omaha, Nebr	18	.....	.....	0.36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.68	.....	.....	.....
Philadelphia, Pa	24	.....	.....	0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.19	.....	.....	.....
Pittsburg, Pa.*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland, Me	12	.....	.....	0.54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.33	.....	.....	.....
Portland, Oreg	28	.....	.....	0.51	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.10	.....	.....	.....
Rochester, N. Y	19-20	.....	.....	0.62	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.20	.....	.....	.....
St Louis, Mo	4-5	9.36 a.m.	4.30 a.m.	3.33	12.17 a.m.	1.30 a.m.	1.74	0.88	0.93	0.98	0.99	1.00	1.03	1.05	1.06	1.09	1.14	1.23	1.36	.....	.....
St. Paul, Minn	19	.....	.....	1.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.17	.....	.....	.....
Salt Lake City, Utah	2	.....	.....	0.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.22	.....	.....	.....
San Diego, Cal	17	.....	.....	0.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.25	.....	.....	.....
San Francisco, Cal	27-28	.....	.....	1.38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.21	.....	.....	.....
Savannah, Ga	13	11.30 a.m.	1.21 p.m.	0.91	12.27 p.m.	12.47 p.m.	0.30	0.38	0.44	0.51	0.58	.....	.....	.....	.....	.....	.....	0.30	.....	.....	.....
Seattle, Wash	28	.....	.....	0.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.30	.....	.....	.....
Tampa, Fla	3	.....	.....	0.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.30	.....	.....	.....
Vicksburg, Miss	5-6	4.45 p.m.	10.15 a.m.	2.03	6.07 p.m.	6.48 p.m.	0.10	0.05	0.20	0.29	0.40	0.42	0.44	0.45	0.49	0.70	0.80	0.85	.....	.....	.....
Washington, D. C	19-20	.....	.....	0.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.15	.....	.....	.....
Wilmington, N. C	12	.....	.....	0.13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.11	.....	.....	.....

*Self register out of order. †No record on account of snow. ‡Gauge overflowed. §Estimated.

TABLE XII.—*Excessive precipitation, by stations, for March, 1897.*

Stations.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Alabama.	*Inches.*	*Inches.*		*Ins.*	*h.m.*	
Bermuda	.....	2.80	22	.....	.....	.....
Bridgeport	13.17	3.21	11-12	.....	.....	.....
Citronelle	.....	2.58	22-23	.....	.....	.....
Claiborne	.....	4.50	22-23	.....	.....	.....
Cordova	10.27	2.97	5-6	.....	.....	.....
Daphne	10.03	2.95	31	.....	.....	.....
Decatur	15.81	2.56	11-12	.....	.....	.....
Do	.....	4.45	18-19	.....	.....	.....
Demopolis	.....	4.08	4-5	.....	.....	.....
Elba	11.63	5.00	22	.....	.....	.....
Eufaula	11.29	9.84	21-23	.....	.....	.....
Evergreen	.....	6.45	21-23	.....	.....	.....
Florence	16.15	5.15	18	.....	.....	.....
Fort Deposit	.....	3.05	23	.....	.....	.....
Gadsden	.....	2.57	5-6	.....	.....	.....
Greensboro	.....	3.05	4-5	.....	.....	.....
Hamilton	15.48	2.89	5-6	.....	.....	.....
Do	.....	3.28	10-11	.....	.....	.....
Jasper	14.35	5.30	5-6	.....	.....	.....
Do	.....	2.80	12	.....	.....	.....
Madison Station	13.68	3.06	11-12	.....	.....	.....
Marion	.....	3.28	5-6	.....	.....	.....
Mobile	.....	2.91	30-31	1.55	0 30	30
Montgomery	12.02	4.82	5-6	2.02	1 00	6
Do	.....	2.97	12-13	1.32	1 00	12
Mount Willing	12.17	3.03	6	.....	.....	.....
Do	.....	2.78	22	.....	.....	.....
Newbern	.....	3.50	5	.....	.....	.....
Newburg	20.83	3.56	18	.....	.....	.....
Newton	14.51	10.29	22	.....	.....	.....
Oneonto	10.23	.....	.....	.....	.....	.....
Oxanna	.....	2.54	12-13	.....	.....	.....
Pushmataha	.....	4.00	5	.....	.....	.....
Do	.....	2.89	12	.....	.....	.....
Rockmills	.....	2.92	5-6	.....	.....	.....
Selma	13.43	8.06	5-6	.....	.....	.....
Scottaboro	13.47	3.10	4-5	.....	.....	.....
Do	.....	3.45	12	.....	.....	.....
Tallassee	11.25	3.75	5-6	.....	.....	.....
Thomasville	12.33	4.15	4-5	.....	.....	.....
Do	.....	3.00	19	3.00	2 00	19
Union Springs	12.94	7.95	21-23	.....	.....	.....
Uniontown	.....	4.35	5	.....	.....	.....
Valleyhead	13.73	3.60	5	.....	.....	.....
Do	.....	3.05	11	.....	.....	.....
Warrior	.....	3.10	5-6	.....	.....	.....
Do	.....	3.00	12-13	.....	.....	.....
Wetumpka	14.02	6.94	5-6	.....	.....	.....
Arkansas.						
Amity	12.09	4.91	17-18	.....	.....	.....
Beebranch	.....	2.55	17	.....	.....	.....
Blackton	16.90	9.25	17-18	.....	.....	.....
Blanchard Springs	10.72	3.34	15-16	.....	.....	.....
Brinkley	13.05	.....	.....	.....	.....	.....
Dallas	11.29	2.75	17	.....	.....	.....
Elon	.....	2.69	15	.....	.....	.....
Forrest	13.78	5.98	17-18	.....	.....	.....
Helena	13.86	3.65	18-19	.....	.....	.....
Hot Springs	12.58	5.58	17-18	.....	.....	.....
Hot Springs (near)	13.31	2.75	5	.....	.....	.....
Do	.....	5.37	17-18	.....	.....	.....
Little Rock	10.43	.....	.....	.....	.....	.....
Lonoke	12.18	3.50	17	2.00	2 00	17
Luna Landing	.....	2.85	15	.....	.....	.....
Malvern	10.28	3.73	11	.....	.....	.....
Marvell	12.76	3.56	17-18	.....	.....	.....
Moore	17.04	4.50	17	.....	.....	.....
Mossville	12.68	2.79	18-19	.....	.....	.....
Mount Nebo	.....	3.50	16-17	.....	.....	.....
Pinebluff	11.33	2.90	10-11	.....	.....	.....
Wiggs	14.65	5.71	17-18	.....	.....	.....
Witts Springs	.....	2.57	17	.....	.....	.....
California.						
Azusa	.....	4.32	6-7	.....	.....	.....
Bear Valley	19.12	3.30	6	.....	.....	.....
Bowmans Dam	18.94	3.56	6	.....	.....	.....
Crescent City	12.87	.....	.....	.....	.....	.....
Edmanton	12.07	.....	.....	.....	.....	.....
Fordyce Dam	12.55	.....	.....	.....	.....	.....
Fort Ross	10.95	3.50	27	.....	.....	.....
Georgetown	13.65	2.68	5-6	.....	.....	.....
Do	.....	3.30	27-28	.....	.....	.....
Iowa Hill	11.33	.....	.....	.....	.....	.....
Laporte	13.51	.....	.....	.....	.....	.....
Malakoff Mine	11.15	.....	.....	.....	.....	.....
Middletown	.....	3.00	27	.....	.....	.....
Mills College	.....	2.83	27-28	.....	.....	.....
Pilot Creek	15.20	3.71	28	.....	.....	.....
Shasta	.....	4.35	27	.....	.....	.....
Summerdale	11.35	2.55	6	.....	.....	.....
Upper Mattole	13.29	3.10	27-28	.....	.....	.....
Florida.						
Jupiter	.....	3.30	2-3	2.33	1 55	3
Lake Butler	.....	2.50	23	.....	.....	.....
Quincy	.....	2.67	6	.....	.....	.....
Tallahassee	.....	2.69	19	.....	.....	.....
Do	.....	4.37	22-23	.....	.....	.....
Georgia.						
Albany	11.51	9.35	21-23	.....	.....	.....
Allentown	.....	.....	.....	1.03	1 00	31

TABLE XII.—*Excessive precipitation*—Continued.

Stations.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Georgia—Continued.	*Inches.*	*Inches.*		*Ins.*	*h.m.*	
Americus	11.57	8.86	21-23	.....	.....	.....
Blakely	12.62	10.54	21-22	.....	.....	.....
Brag	.....	3.96	22-23	.....	.....	.....
Cedartown	.....	2.67	6	.....	.....	.....
Dahlonega	.....	2.60	6	.....	.....	.....
Diamond	.....	3.24	11-12	.....	.....	.....
Dublin	.....	2.96	22-23	.....	.....	.....
Fort Gaines	12.70	11.26	22-23	.....	.....	.....
Hawkinsville	.....	5.50	22-23	.....	.....	.....
Louisville	10.77	5.31	13	.....	.....	.....
Macon	10.58	3.03	12-13	.....	.....	.....
Marshallville	10.06	5.30	21-22	.....	.....	.....
Milledgeville	10.63	3.25	12-13	.....	.....	.....
Monticello	.....	5.00	11	.....	.....	.....
Morgan	13.31	11.52	21-22	.....	.....	.....
Piscola	.....	2.90	23	.....	.....	.....
Poulan	.....	6.03	21-22	.....	.....	.....
Resaca	10.00	2.68	5-6	.....	.....	.....
Do	.....	2.90	11-12	.....	.....	.....
Rome	.....	4.50	11-12	.....	.....	.....
Talbotton	12.99	3.24	13	.....	.....	.....
Illinois.						
Albion	10.19	.....	.....	.....	.....	.....
Carlinville	.....	2.88	4-5	.....	.....	.....
Carlyle	.....	5.10	4-5	.....	.....	.....
Cisne	12.00	4.10	4-5	.....	.....	.....
Duquoin	10.70	.....	.....	.....	.....	.....
Friendgrove	10.67	3.33	4-5	.....	.....	.....
Golconda	11.44	3.16	9	.....	.....	.....
Grafton	.....	2.50	4-5	.....	.....	.....
Halliday	11.98	2.77	18	.....	.....	.....
Herrin	11.43	2.60	17	.....	.....	.....
Jordans Grove	10.51	2.74	4-5	.....	.....	.....
Louisville	.....	4.65	4-5	.....	.....	.....
Martinsville	.....	3.94	4-5	.....	.....	.....
Mascoutah	.....	3.90	4-5	.....	.....	.....
Mount Carmel	10.22	3.70	4-5	.....	.....	.....
Do	.....	3.30	18-19	.....	.....	.....
Mount Vernon	10.18	.....	.....	.....	.....	.....
New Burnside	10.97	.....	.....	.....	.....	.....
Olney	11.77	5.63	4-5	.....	.....	.....
Palestine	11.02	5.25	4-5	.....	.....	.....
Robinson	11.33	5.97	4-5	.....	.....	.....
Rose Hill	10.40	4.85	4-5	.....	.....	.....
St. John	11.55	.....	.....	.....	.....	.....
Indiana.						
Anderson	.....	2.50	4-5	.....	.....	.....
Bloomington	10.63	5.89	4-5	.....	.....	.....
Bright	.....	4.90	4-5	.....	.....	.....
Butlerville	13.03	6.96	4-5	.....	.....	.....
Cambridge City	.....	3.69	4-5	.....	.....	.....
Columbus	.....	5.68	4-5	.....	.....	.....
Connersville	.....	3.19	4-5	.....	.....	.....
Evansville	10.96	.....	.....	.....	.....	.....
Greencastle	.....	3.79	4-5	.....	.....	.....
Greensburg	.....	4.65	4-5	.....	.....	.....
Indianapolis	.....	2.23	4-5	.....	.....	.....
Knightstown	.....	3.50	4-5	.....	.....	.....
Laconia	.....	3.00	2-3	.....	.....	.....
Mauzy	.....	3.12	3-4	.....	.....	.....
Rushville	.....	3.35	4-5	.....	.....	.....
Seymour	12.95	7.00	4-5	.....	.....	.....
Terre Haute	.....	3.25	4-5	.....	.....	.....
Vevay	.....	2.50	4-5	.....	.....	.....
Vincennes	13.22	4.32	4-5	.....	.....	.....
Worthington	10.68	5.50	4-5	.....	.....	.....
Indian Territory.						
Kemp	.....	3.47	28	.....	.....	.....
Iowa.						
Afton	.....	3.96	31	.....	.....	.....
Alta	.....	2.70	31	.....	.....	.....
Atlantic	.....	2.53	31	.....	.....	.....
Audubon	.....	2.78	31	.....	.....	.....
Galva	.....	2.53	31	.....	.....	.....
Gardengrove	.....	3.76	31	.....	.....	.....
Greenfield	.....	3.24	31	.....	.....	.....
Hopeville	.....	2.64	31	.....	.....	.....
Larrabee	.....	3.01	31	.....	.....	.....
Maple Valley	.....	3.12	31	.....	.....	.....
Osceola	.....	2.65	31	.....	.....	.....
Stuart	.....	4.00	31	.....	.....	.....
Kentucky.						
Earlington	12.57	.....	.....	.....	.....	.....
Ensor	10.75	.....	.....	.....	.....	.....
Fords Ferry	10.82	3.20	8-9	.....	.....	.....
Henderson	11.64	.....	.....	.....	.....	.....
Leitchfield	.....	3.30	9	.....	.....	.....
Marrowbone	.....	2.86	9-10	.....	.....	.....
Paducah	.....	2.73	9	.....	.....	.....
Princeton	10.60	2.66	8-9	.....	.....	.....
Russellville	.....	2.62	23	.....	.....	.....
Southfork	.....	3.55	18	.....	.....	.....
Louisiana.						
Donaldsonville	.....	3.10	8	.....	.....	.....
Farmerville	.....	2.96	14-15	.....	.....	.....
Lafayette	.....	.....	.....	1.08	0 30	22
Do	.....	.....	.....	1.01	0 20	30
Paincourtville	.....	3.19	7	.....	.....	.....
Sugar Experiment Station	.....	3.50	31	.....	.....	.....
Thibodeaux	.....	2.78	31	.....	.....	.....

TABLE XII.—*Excessive precipitation*—Continued.

Stations.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Louisiana—Continue	*Inches.*	*Inches.*		*Ins.*	*h.m.*	
Wallace	....	2.55	7	.....	.....	.....
Mississippi.						
Agricultural College	.....	2.75	5	.....	.....	.....
Austin	11.19	6.24	18–19	.....	.....	.....
Batesville	12.02	3.20	16	.....	.....	.....
Biloxi	12.64	4.48	31	1.03	1 00	29
Briers	12.68	8.17	5	.....	.....	.....
Fayette	.....	4.60	5	.....	.....	.....
Fulton	19.12	2.52	12	.....	.....	.....
Do	.....	3.54	18	.....	.....	.....
Greenville *a*	11.37	3.80	15–16	.....	.....	.....
Greenville *b*	11.48	4.02	15–16	.....	.....	.....
Holly Springs	16.35	3.29	18	.....	.....	.....
Logtown	15.84	3.40	21	3.40	2 00	21
Do	.....	8.37	31	.....	.....	.....
Magnolia	.....	.....	.....	1.49	1 00	22
Mosspoint	15.35	3.00	6	.....	.....	.....
Do	.....	7.35	31	.....	.....	.....
Natchez	.....	3.75	6	.....	.....	.....
Palo Alto	11.46	.....	.....	.....	.....	.....
Pontotoc	16.73	2.80	11	.....	.....	.....
Do	.....	4.57	18	.....	.....	.....
Water Valley	15.50	2.50	18	1.00	0 17	19
Missouri.						
Akron	.....	2.95	31	.....	.....	.....
Bethany	.....	2.53	31	.....	.....	.....
Birchtree	11.69	.....	.....	.....	.....	.....
Darksville	.....	3.50	31	.....	.....	.....
Edgehill	10.37	.....	.....	.....	.....	.....
Fayette	.....	2.73	31	1.10	0 30	31
Gordonville	15.23	2.65	9	.....	.....	.....
Do	.....	2.65	31	.....	.....	.....
Grovedale	.....	4.10	4	.....	.....	.....
Hastain	.....	3.25	3	.....	.....	.....
Hermann	.....	2.90	4–5	.....	.....	.....
Houston	10.88	2.64	31	.....	.....	.....
Irena	.....	3.01	31	.....	.....	.....
Ironton	10.18	.....	.....	.....	.....	.....
Lebanon	10.04	2.50	4	.....	.....	.....
Marble Hill	12.63	.....	.....	.....	.....	.....
Mexico	.....	2.65	31	.....	.....	.....
Mine La Motte	10.42	.....	.....	.....	.....	.....
Montreal	10.94	3.90	31	2.50	2 00	31
Mount Vernon	.....	3.43	4	.....	.....	.....
Neosho	.....	2.66	4–5	.....	.....	.....
New Haven	.....	2.50	4	.....	.....	.....
New Madrid	14.52	.....	.....	.....	.....	.....
Oakfield	.....	3.65	4–5	.....	.....	.....
Oak Ridge	12.71	.....	.....	.....	.....	.....
Palmyra	.....	2.71	31	.....	.....	.....
Phillipsburg	.....	2.70	4–5	.....	.....	.....
Poplar Bluff	11.25	.....	.....	.....	.....	.....
Potosi	.....	2.50	18	.....	.....	.....
Princeton	.....	3.20	31	.....	.....	.....
St. Charles	10.67	2.68	4	.....	.....	.....
Do	.....	3.81	31	.....	.....	.....
St. Louis	.....	3.33	4–5	1.23	1 00	5
Sarcoxie	.....	2.80	5	.....	.....	.....
Sikeston	10.02	.....	.....	.....	.....	.....
Sublett	.....	2.75	31	.....	.....	.....
Warrenton	.....	2.92	4	.....	.....	.....
Willow Springs	11.59	2.62	31	.....	.....	.....
Nebraska.						
Beatrice	.....	2.60	31	.....	.....	.....
North Carolina.						
Bryson City	11.93	2.55	5–6	.....	.....	.....
Horse Cove	.....	2.50	14	.....	.....	.....
Murphy	11.98	2.65	5–6	.....	.....	.....
Skyuka	10.78	.....	.....	.....	.....	.....
Ohio.						
Bellefontaine	.....	2.68	4–5	.....	.....	.....
Bethany	.....	3.75	5	.....	.....	.....
Bloomingburg	.....	3.40	4–5	.....	.....	.....
Camp Dennison	.....	5.10	4–5	.....	.....	.....
Cedarville	.....	3.70	4–5	.....	.....	.....
Cincinnati	.....	4.97	4–5	.....	.....	.....
Circleville	.....	2.70	5	.....	.....	.....
Clarksville	.....	3.89	4–5	.....	.....	.....
Clifton	.....	3.33	5	.....	.....	.....
Columbus	.....	2.87	4–5	.....	.....	.....
Dayton	.....	3.28	5	.....	.....	.....
Frankfort	.....	3.25	5	.....	.....	.....
Granville	.....	2.60	5	.....	.....	.....
Greenfield	.....	3.00	5	.....	.....	.....
Greenville	.....	3.11	5	.....	.....	.....
Jacksonboro	.....	3.75	3–4	.....	.....	.....
New Bremen	.....	3.50	5	.....	.....	.....
New Holland	.....	3.36	5	.....	.....	.....
North Lewisburg	.....	2.50	5	.....	.....	.....
Ohio State University	.....	3.19	5	.....	.....	.....
Pataskala	.....	2.90	5	.....	.....	.....
Plattsburg	.....	3.28	5	.....	.....	.....
Rosewood	.....	3.36	5	.....	.....	.....
Spencerville	.....	2.50	4–5	.....	.....	.....
Springboro	.....	3.15	5	.....	.....	.....
Walnut	.....	2.56	5	.....	.....	.....
Waynesville	.....	3.60	5	.....	.....	.....
Oklahoma.						
Ponca	.....	.....	.....	1.25	1 30	30

TABLE XII.—*Excessive precipitation*—Continued.

Stations.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Oregon.	*Inches.*	*Inches.*		*Ins.*	*h.m.*	
Astoria	11.88	.....	.....	.....	.....	.....
Bay City	13.18	.....	.....	.....	.....	.....
Cascade Locks	11.47	.....	.....	.....	.....	.....
Gardiner	14.23	.....	.....	.....	.....	.....
Glenora	22.77	3.15	25	.....	.....	.....
Government Camp	16.37	.....	.....	.....	.....	.....
Langlois	19.14	.....	.....	.....	.....	.....
Nehalem	18.29	2.69	23	.....	.....	.....
Newport	10.12	.....	.....	.....	.....	.....
South Carolina.						
Blackville	.....	3.36	13	.....	.....	.....
Edisto	.....	3.58	12–13	.....	.....	.....
Gillisonville	.....	2.81	12–13	.....	.....	.....
Pinopolis	.....	3.04	12–13	.....	.....	.....
Port Royal	.....	3.17	12–13	.....	.....	.....
Trial	.....	2.65	12–13	.....	.....	.....
South Dakota.						
Aberdeen	.....	3.00	11–12	.....	.....	.....
Do	.....	2.60	31	.....	.....	.....
Wessington Springs	.....	3.00	31	.....	.....	.....
Tennessee.						
Andersonville	11.37	.....	.....	.....	.....	.....
Ashwood	12.68	2.85	18–19	.....	.....	.....
Benton	13.98	.....	.....	.....	.....	.....
Bolivar	12.45	4.55	18–19	.....	.....	.....
Cagle	13.05	2.65	18–19	.....	.....	.....
Charleston	11.97	.....	.....	.....	.....	.....
Charlotte	10.63	.....	.....	.....	.....	.....
Chattanooga	11.22	.....	.....	.....	.....	.....
Clinton	11.02	.....	.....	.....	.....	.....
Decatur	11.97	.....	.....	.....	.....	.....
Dyersburg	10.75	.....	.....	.....	.....	.....
Erasmus	12.27	.....	.....	.....	.....	.....
Fairmont	14.06	.....	.....	.....	.....	.....
Florence	10.53	.....	.....	.....	.....	.....
Franklin	11.36	4.69	18–19	.....	.....	.....
Greenville	10.52	.....	.....	.....	.....	.....
Harriman	12.15	2.76	18–19	.....	.....	.....
Hickory Withe	12.12	.....	.....	.....	.....	.....
Hohenwald	16.43	3.56	18–19	.....	.....	.....
Jackson	11.75	.....	.....	.....	.....	.....
Kingston	10.59	.....	.....	.....	.....	.....
Loudon	11.50	.....	.....	.....	.....	.....
Lynnville	14.27	2.94	18–19	.....	.....	.....
McMinnville	16.90	2.75	5	.....	.....	.....
Molino	14.36	4.79	18–19	.....	.....	.....
Newport	10.18	.....	.....	.....	.....	.....
Nunnelly	13.63	2.72	18–19	.....	.....	.....
Palmetto	12.38	3.09	18–19	.....	.....	.....
Pope	15.60	5.05	5	.....	.....	.....
Do	.....	4.48	8–9	.....	.....	.....
Riddleton	10.92	3.07	18–19	.....	.....	.....
Rogersville	10.52	.....	.....	.....	.....	.....
Rugby	10.41	.....	.....	.....	.....	.....
St. Joseph	18.14	7.93	17–19	.....	.....	.....
Savannah	12.60	2.56	18	.....	.....	.....
Sewanee	16.79	3.60	18–19	.....	.....	.....
Springdale	.....	2.65	8–9	.....	.....	.....
Strawberry Plains	10.40	.....	.....	.....	.....	.....
Tellico Plains	11.22	.....	.....	.....	.....	.....
Tullahoma	16.85	4.10	13–14	.....	.....	.....
Do	.....	2.85	19	.....	.....	.....
Waynesboro	12.99	3.00	18–19	.....	.....	.....
Texas.						
Abilene	.....	.....	.....	1.04	0 30	16
Colmesneil	.....	2.76	28	.....	.....	.....
Corsicana	.....	2.90	29	.....	.....	.....
Corpus Christi	.....	.....	.....	1.00	0 30	28
Dublin	.....	3.00	28	.....	.....	.....
Estelle	.....	3.40	28	.....	.....	.....
Forestburg	.....	2.60	28	.....	.....	.....
Fort Worth	.....	2.65	28	.....	.....	.....
Gainesville	.....	3.75	28–29	.....	.....	.....
Golindo	.....	3.25	28	.....	.....	.....
Grapevine	.....	2.75	28	.....	.....	.....
Hewitt	.....	2.60	28	.....	.....	.....
Longview	10.31	3.06	27–28	.....	.....	.....
Mann	.....	3.13	28	.....	.....	.....
Marshall	.....	3.00	28–29	.....	.....	.....
New Braunfels	.....	.....	.....	1.04	1 00	18
Palestine	.....	3.27	28–29	1.54	1 00	28
Panther	.....	2.96	27–28	.....	.....	.....
Point Isabel	.....	.....	.....	1.00	1 00	28
Rhineland	.....	2.87	28	.....	.....	.....
Sulphur Springs	10.15	2.55	28	.....	.....	.....
Temple	.....	2.63	28	.....	.....	.....
Virginia.						
Marion	.....	2.60	18–19	.....	.....	.....
Washington.						
Aberdeen	10.61	.....	.....	.....	.....	.....
Cascade Tunnel	16.90	3.00	24	.....	.....	.....
Lapush	12.32	2.80	23	.....	.....	.....
Stampede	12.65	.....	.....	.....	.....	.....
Tatoosh Island	11.31	.....	.....	.....	.....	.....
Wyoming.						
Laramie	.....	3.75	29–30	.....	.....	.....

Chart I. Tracks of Centers of High Areas, March 1937

Chart I. Tracks of Centers of High Areas. March, 1897.

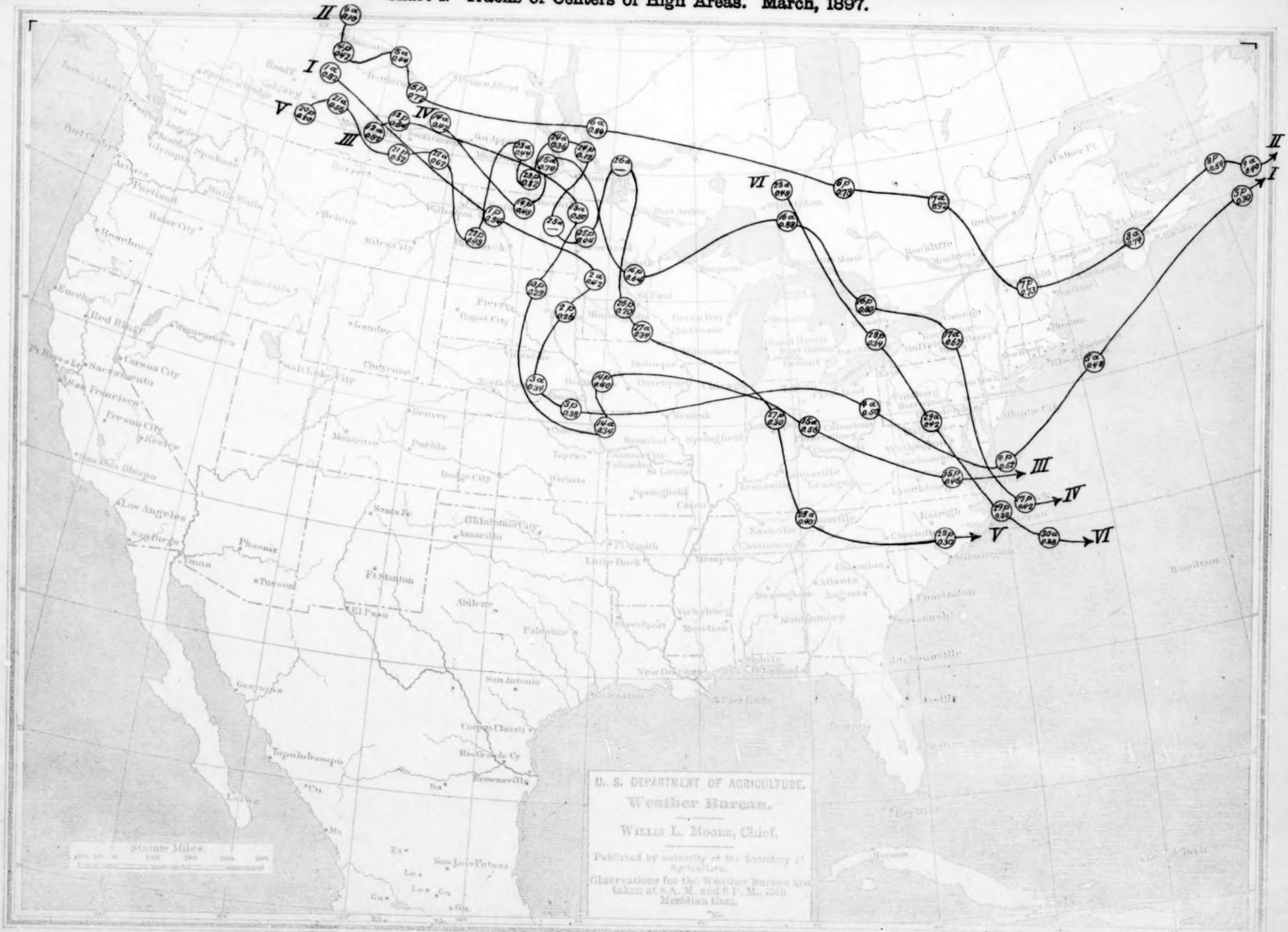

Chart II. Tracks of Centers of Low Areas. March, 1897.

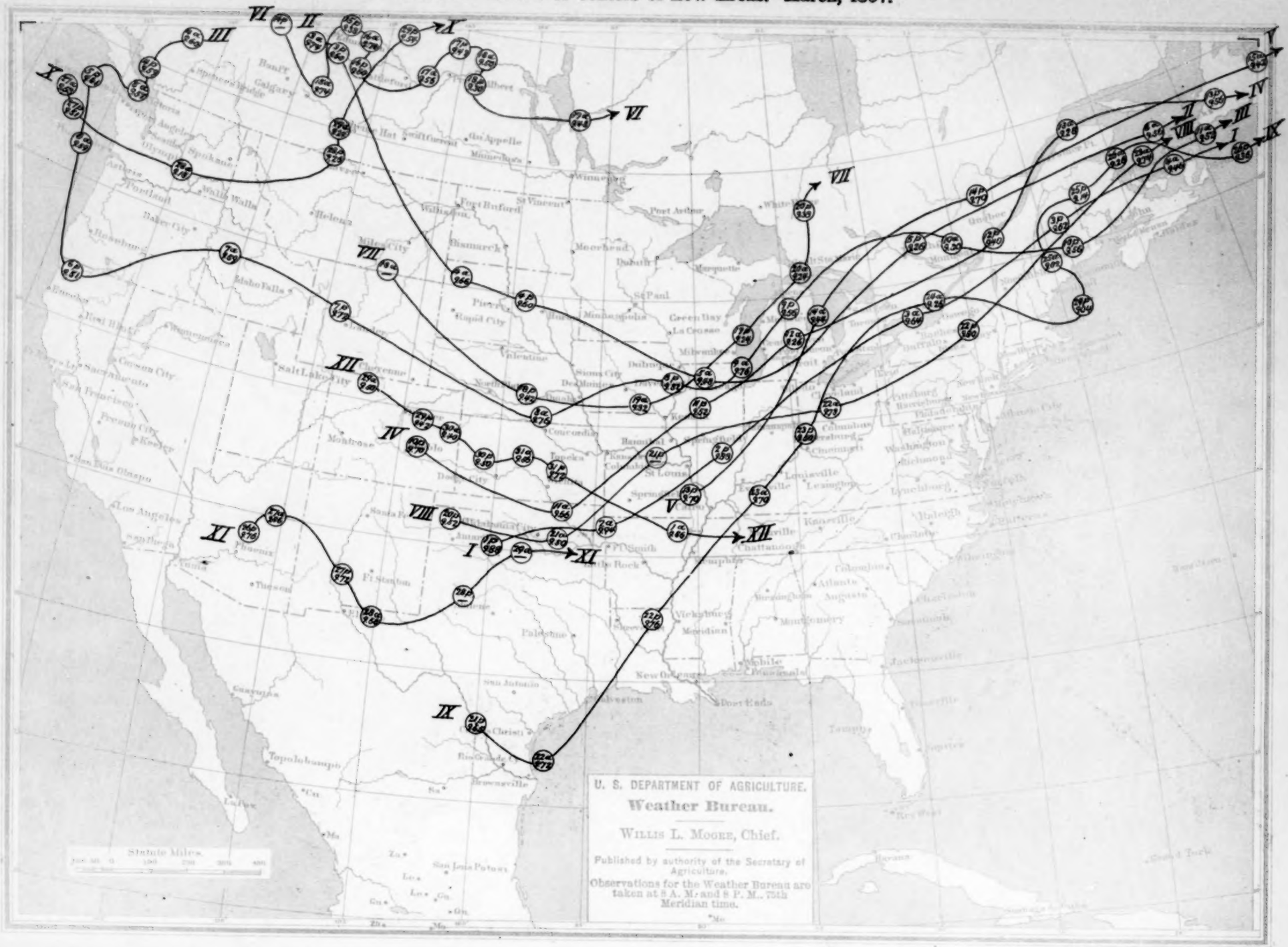

Chart III. Total Precipitation. March, 1897.

Chart III. Total Precipitation. March, 1897.

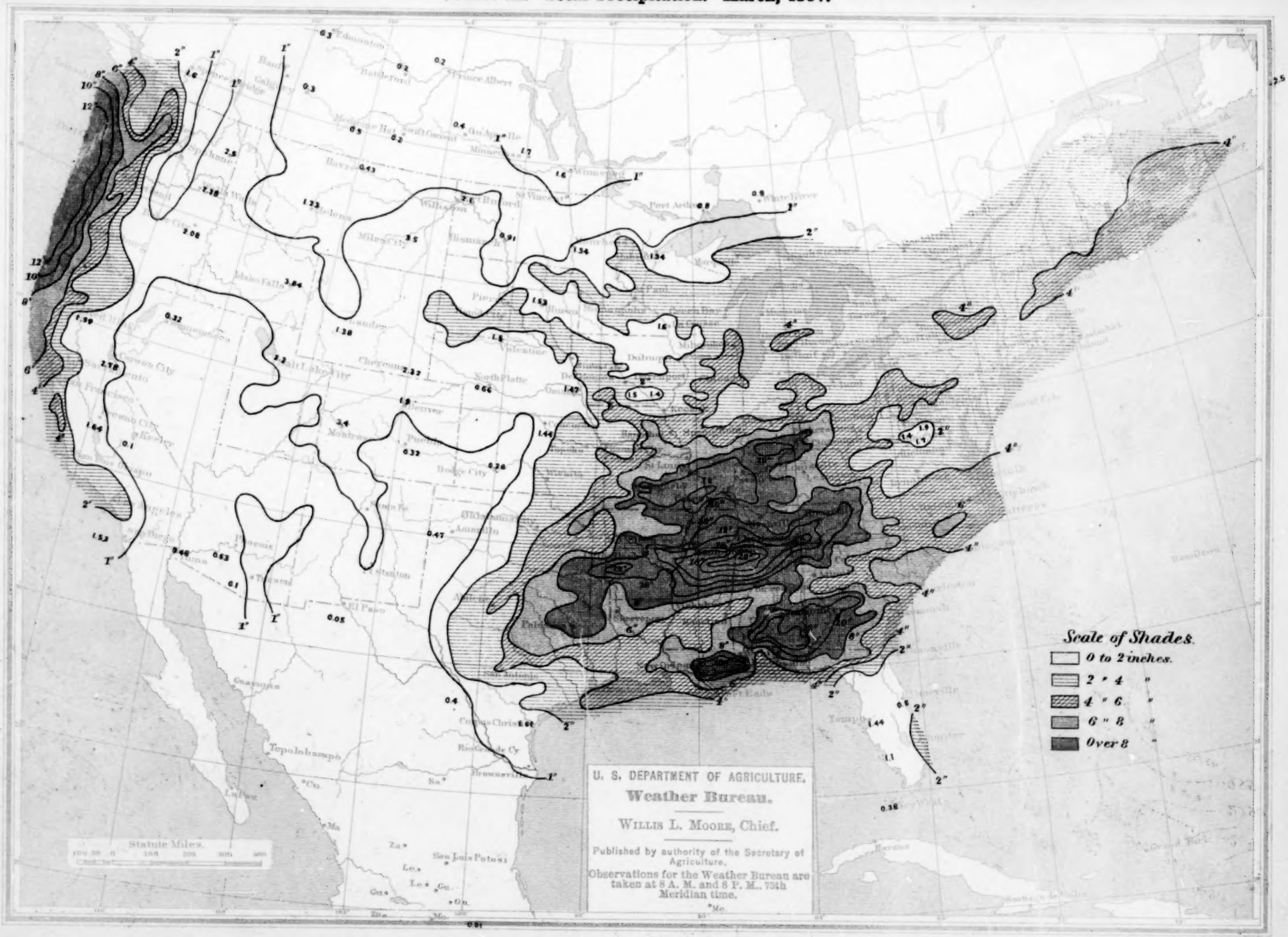

Chart IV. Isoba[illegible]sotherms, and Resultant Winds. March, 1897.

Chart V. Depth of Snowfall and Limits of Freezing Weather. March, 1897.

Chart V. Depth of Snowfall and Limits of Freezing Weather. March, 1897.

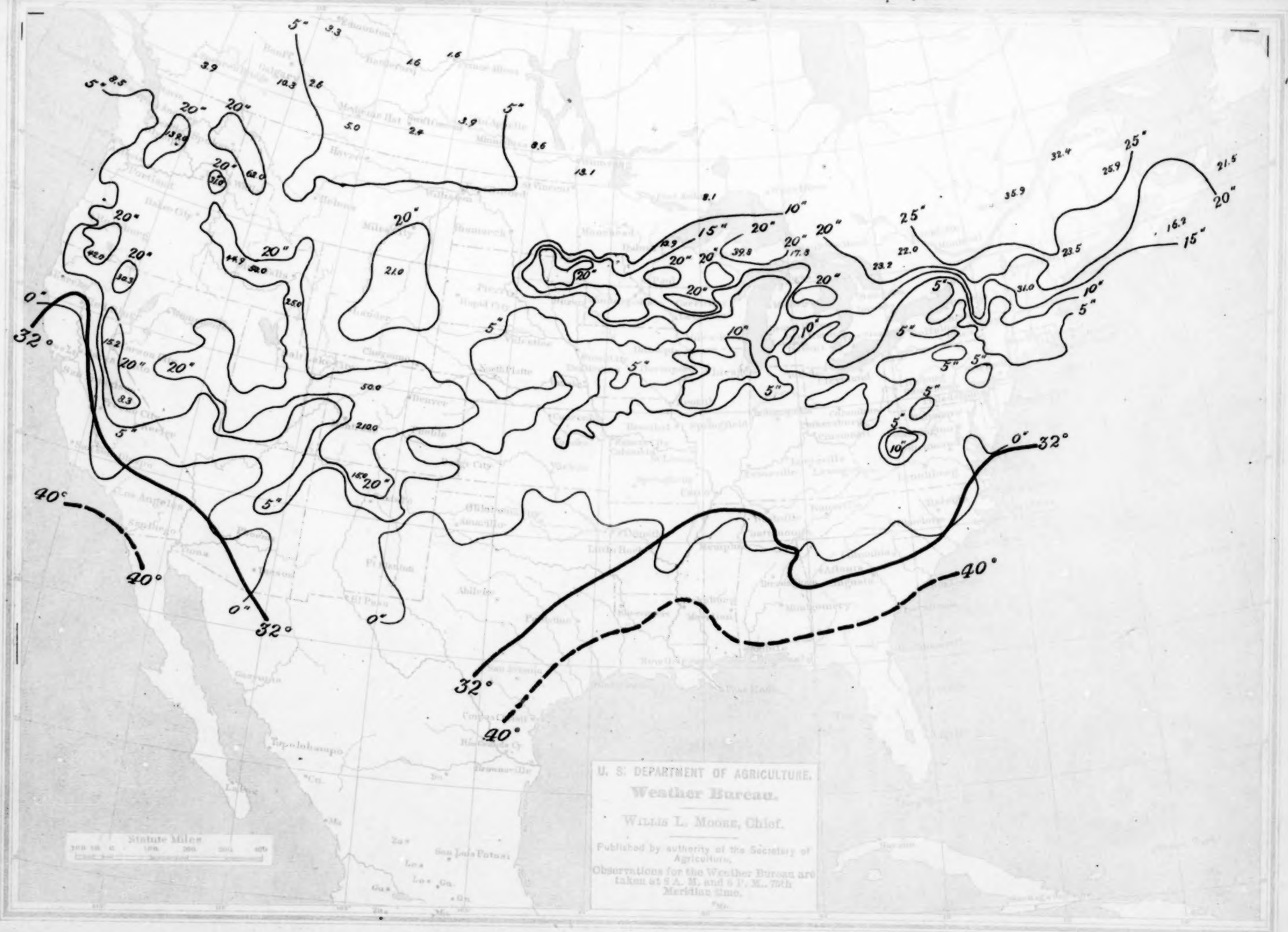

Chart VI. Depth of Snow on Ground at the Close of the Month. March, 1897.